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Canadian Environmental Advisory Council

Land Use Planning and Sustainable Development in Canada

by Nigel Richardson

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Land Use Planning and Sustainable Development in Canada

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The Canadian Environmental Advisory Council

The Canadian Environmental Advisory Council (CEAC) is a body representing a cross-section of Canadians who are knowledgeable and concerned about the environment. It operates in a confidential advisory capacity to the Minister of the Environment. It provides the Minister with an alternative to the advice provided by the Department of the Environment and other federal agencies, and to the advice of specific interest groups. Council's public role, in terms of activities such as the publishing of reports, is therefore secondary to its primary function of providing advice to the Minister of the Environment.

The Author

Since studying urban and regional planning at McGill and the University of Liverpool, Nigel Richardson has worked for more than thirty years either as public servant or as consultant throughout Canada and for every level of government. He has also served as a visiting university professor and is the author of many published articles and papers on land use planning and related subjects. He is a member of the Canadian and Ontario professional planning institutes, and is currently vice-president of the Ontario Society for Environmental Management.

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March 31, 1989

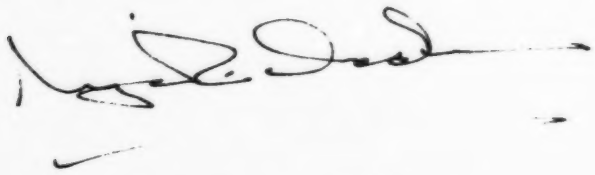
Dr. R.J.D. Page
Chairman
Canadian Environmental
Advisory Council
Ottawa, Ontario K1A 0H3

Dear Dr. Page,

I am pleased to submit to you my paper on land use planning in Canada and its potential as a tool for the achievement of sustainable development. I am glad to have had the opportunity to undertake this extremely interesting assignment for CEAC, and I hope that the Council will find the paper of value in the exercise of its responsibility to advise the Government of Canada on environmental policy.

Too often, land use planning is thought of as no more than an aspect of municipal administration. I trust that this paper demonstrates that it is very much more than that; that indeed land use planning can make a very important contribution to attaining the goal of sustainable development in Canada if its potential is fully realised. In doing this, the primary responsibility rests not with local governments but at the federal, provincial and territorial levels. I hope that this paper may encourage the "senior" governments to understand and to accept this responsibility and the challenge it brings.

Yours sincerely,



Nigel H. Richardson, M.C.I.P.

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For whatever sins of omission and commission have escaped all this scrutiny, the author is solely responsible.

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Preface

The Canadian Environmental Advisory Council is pleased to release this report on Land Use Planning and Sustainable Development in Canada, prepared by Mr. Nigel Richardson. Council's objective in making the report public is to stimulate understanding of the ways in which sensitive land use planning can contribute to municipal, provincial, and federal conservation strategies, thus contributing to sustainable development.

Council was fortunate to obtain the services of Mr. Richardson because of his extensive background and experience as a practitioner of land use planning in the Provinces and Territories and because of his interests in the historical development of the subject. In his review he has skilfully sketched the background of planning in Canada, displaying against it numerous recent efforts that merit recognition and evaluation.

Land use planning is a tool, a methodology, a means. Hitherto it has been directed to goals of short-term efficiency: balancing rival claims on the land, maximizing economic and social values. A new and more important goal has now appeared, recognized as the need to secure a sustainable relationship between people and the planet's surface, its land and water. This must hereafter shape and direct the planning tool.

Sustainable development is an ecological concept that takes as its model a regenerating forest, an ever-flowing river, an agricultural soil whose fertility is never depleted. Such ecosystems on which humanity depends are sustained when whatever is removed from them is replaced, cyclically. Intelligent planning of the use of different parcels of land within watershed basins, within regions, within the nation, can contribute to both the production and the restoration phases of such sustaining cycles. Furthermore, intelligent land use planning can prevent congestion and pollution and can lessen social discord.

Although much can be achieved in support of sustainable development by properly designed and administered planning processes, more than this is involved. The report isolates some of the key areas that need to be considered together. It examines the coordination, integration and relative positioning of land use processes, all subjects of interest to Council. Perhaps the best synthesis views conservation strategies (sustainable development strategies) as the first-order goal to which land use planning contributes, with environmental impact assessments contributing in their turn to the planning process. This view, of course, raises questions of legal and administrative feasibility.

Acceptance of some such hierarchical arrangement, however, will avoid the conflicts inherent in the independent development of plans and programs under the separate banners of sustainable development, conservation strategies, land use planning, and environmental impact assessment. Council encourages active consideration and debate of this important subject.

As to the concept of land use planning as a means, Council supports the central message of the report stating:

> If land use planning is to be used effectively to support sustainable development, there must be a clear and coherent structure of communications and responsibilities, from policy direction to day-to-day management and decision-making, in every land-related public program.

In addition to the call for clear purposes and agency coordination, land use planning will also benefit from a clearer conception of the ecological nature of land: that is, of land as an ecological system or ecosystem whose parts are interactive just as the whole tract interacts dependently with its surrounding systems. Such an ecological perception of the world is expressed in plans for the clean-up and conservation of the Great Lakes, a model equally applicable to watershed basins and terrestrial regions in general.

Council is convinced that existing planning processes will be improved when integrated and applied within an ecological context. The barriers to integration can be identified. They include: short-term socio-economic goals that reflect wrong perceptions and attitudes, economic incentives that encourage decisions contrary to sound ecological planning, vested interests wedded to non-sustainable but profitable enterprises, fragmentation of planning processes and administrative structures, lack of proper training by professional planners. These barriers must be removed.

The search for the best path to sustainable development should logically begin with a critical examination of current planning. Mr. Richardson's report charts the way, encouraging reflection and debate on the role of land use planning. Council invites serious consideration of the topic not only because of its importance as an invaluable tool but also because of the illumination it can bring to sustainable development.

The Nishnawbe Aski did not believe that man could own the land any more than man could own the sky. Man could share the land with other creatures; man could move across the land to hunt, trap and fish.

New Post Band #69, submission to the Ontario Royal Commission on the Northern Environment, 1978.

All classes of government are concerned, *inter alia*, in the duty of securing that land will be planned and developed so as to promote the best economic uses of the resources of the country and healthy conditions of life for its citizens.

Thomas Adams, Rural Planning and Development, Report to the Commission of Conservation, 1917.

Governments and industry have reacted to correct many of the problems created by past mismanagement of the environment. Sustainable economic development calls for a different approach. It would minimize environmental impact and future clean-up costs by advanced and integrated planning.

Report of the National Task Force on Environment and Economy, 1987.

1. Introduction

The Paper: An Overview

This paper was commissioned by the Canadian Environmental Advisory Council in July, 1988 to:

> Provide a selective and critical over-view of the state of the art of land use planning in Canada.

It was to include, inter alia,

> a succinct summarization of what experience in land use planning has taught Canadians so far, and a futuristic assessment of goals, methods, techniques, educational requirements, etc., that will advance the field towards sustainability in the remainder of this century.

Discussions between the Council and the author led to some refinement of direction and emphasis, giving the paper the following specific objectives:

- To explore the contribution that institutionalized land use planning can make to the achievement of sustainable development.
- To identify general principles of land use planning and its application to further the implementation of sustainable development in different parts of Canada.
- To examine the federal interest and role in land use planning in Canada.

The author has interpreted "the state of the art of land use planning in Canada" quite generously, in the belief that to confine the paper to the "standard" planning programs of municipalities and departments of natural resources would be not just incomplete but misleading. It would be misleading because some of the most worthwhile contributions to conservation and environmental protection have been made through land use planning programs outside the mainstream, and because it would disguise some of the important issues currently affecting land use planning in general.

So the paper deals with provincial agricultural land preservation programs, with the Northern Land Use Planning policy, with water-related planning, and with a sample of the many special land use planning projects that have been undertaken across Canada. It also discusses three policy/program areas which for better or worse are not usually regarded as land use planning at all, but which do have substantial overlaps with land use planning: regional economic development, environmental impact assessment, and conservation strategies.

On the other hand, the theme of the paper limits the attention given to what for many planners is the main focus of land use planning, urban or city planning.

In general the paper places more emphasis on the framework of policy, law and administration within which land use planning functions than on the substance of plans and programs. No land use planning system can guarantee the production of "good" plans, but a poorly designed one will ensure that the product, if any, will be deficient in important ways, ineffective, or both. If this paper has one central message to convey, it is that:

If land use planning is to be used effectively to support sustainable development, there must be a clear and coherent structure of communication and responsibilities, from policy direction to day-to-day management and decision-making, in every land-related public program.

"Land": The term "land", however, is by no means a straightforward concept. In one sense land means simply "terra firma", the solid earth; in another, the word is more or less synonymous with "the environment" or "the ecosystem". To some, land is simply property, to be used, bought and sold; to others, it is a trust to be protected and cared for. Ambiguities and even fundamental differences about the very nature and purposes of land policy and of land use planning itself are therefore inevitable.

Limitations

A rather brief overview of many different programs necessarily sacrifices depth to breadth, and the author is uncomfortably aware that the paper does much less than justice to some of the activities which it touches upon. A number of them could easily be the exclusive subjects of studies of comparable length, and a few have been. In an attempt to compensate to some extent, the references at the end of the paper are intended to assist the reader who wishes to learn more either about land use planning in Canada in general, or about particular programs. The list of "General References" includes several works on which the author relied heavily, and gratefully, in preparing this paper.

However, there is a rather serious gap in the literature. On the whole, neither practising nor academic planners in Canada seem much given to "writing up" particular examples and experiences, and it is hard to find even descriptions, let alone critical examinations, of some of the more interesting experiments in the field. Hence the author has had to rely on personal knowledge of cases and sources of information, and this is obviously neither complete nor balanced; for serious omissions from the paper he can only offer his apologies.

A further limitation is that in several cases the author has had to rely for information on official or semi-official descriptions which present the arrangements in question as they are *meant* to work, not necessarily as they *do* work. Consequently, the reader should be aware that people who are personally familiar with particular cases or programs might give less flattering accounts of them than does this paper. But this is not really important, since, as noted above, the main concern of the paper is with land use planning *systems*; it is a truism that the best of systems in any field is not proof against human failings.

2. Sustainable Development and Land Use Planning

A Strategy for Sustainable Development

The Brundtland Commission has brought home to us what is perhaps the central issue of our time: the need to reconcile economic growth with conservation of the resources upon which growth depends, and in general with safeguarding the entire natural environment which sustains us both physically and spiritually. "Humanity", argues the Commission, "has the ability to make development sustainable — to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" [ref. 55, p. 8]. Canada's own National Task Force on Environment and Economy takes up the theme:

> The economy and its participants exist within the environment, not outside it; we cannot expect to maintain economic prosperity unless we protect the environment and our resource base, the building blocks of development. Correspondingly, economic growth and prosperity provide us with the capability to support wise resource management and protect environmental quality. For this reason, we support the goal of sustainable economic development, which we generally define as development which ensures that the utilization of resources and the environment today does not damage prospects for their use by future generations. [Ref. 40, p. 3]

But "sustainable development" remains more of a slogan than a concrete plan of action. Even the new idea of a "conservation strategy", important though it is, suggests a defence system *against* development more than it does the achievement of *sustainable* development, although this may be neither the intention, nor the nature of an actual strategy.

What we have to devise is a positive *strategy for sustainable development*: a strategy, that is, which recognises economic needs and encourages economic growth within the constraints imposed by the overriding imperative of preserving a lasting, sustaining habitat for humanity.

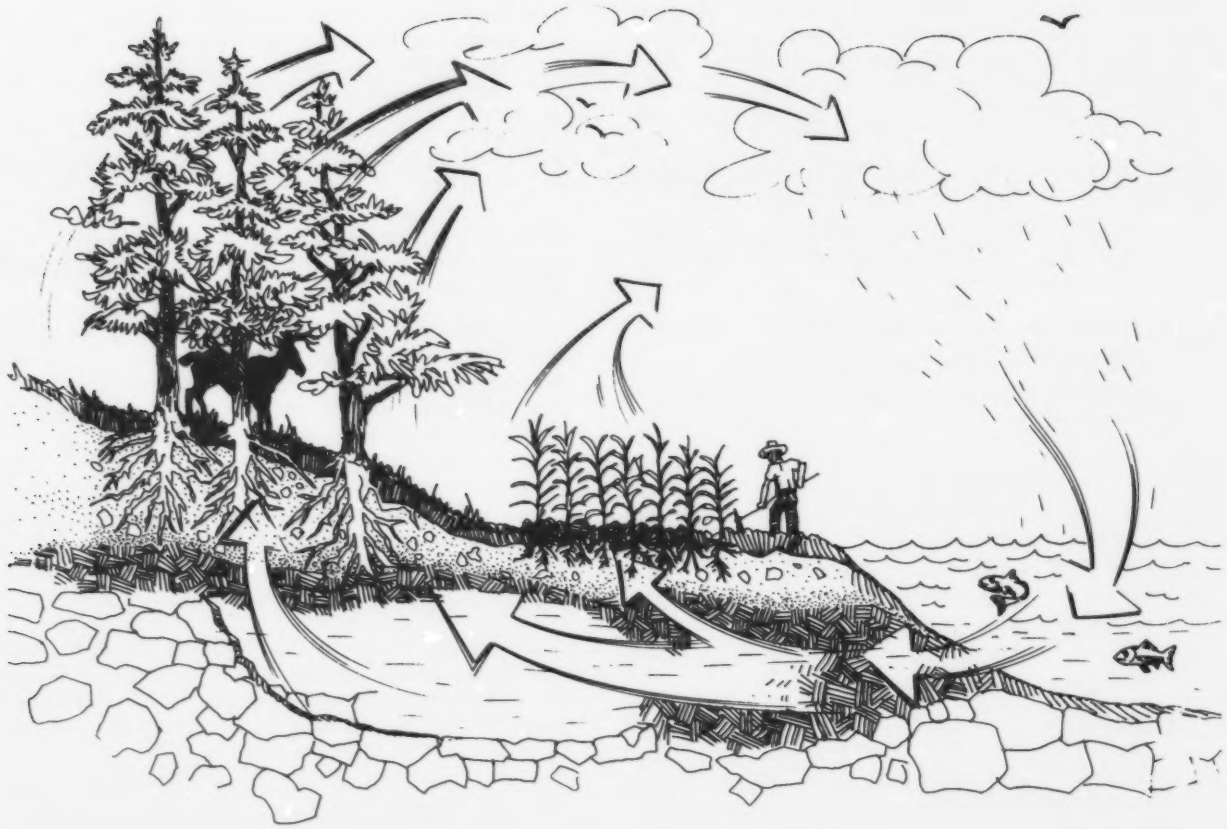
A key element and critical integrating factor in such a strategy must be the land base shared by the economic system and the ecosystem. It is on land that cities, forests and crops alike grow; it is land that supports cattle and caribou; it is on land that virtually every kind of economic activity takes place; land-based activities govern both the quality of water and the demand for it; land-based industries pour pollutants into the air. There is little in the relationship between society and economy on the one hand and the physical environment on the other that is not mediated by land and the ways in which land is used.

Land and the Ecosystem

The word "land" itself is both ambiguous and value-laden. In its narrowest sense it means simply the solid ground beneath our feet, the substance in which crops are sown and the foundations of buildings dug, or an area of terrain that can be surveyed and divided up for human use. But in a more inclusive sense, more consistent with natural reality, the concept of land involves the entire ecosystem, the "natural order" which embraces water, air and living things. In this latter sense, land is an evolving volumetric system of which the earth or the water surface is only a horizontal two-dimensional slice.

As used in this paper, "land" is not strictly defined, but the use of the word tends toward the former sense (though generally including water) for three entirely pragmatic reasons:

- "Land" in this conventional sense is comprehensible and familiar to most people and has a well-established place in the framework of Canadian law and institutions. It is therefore a conceptual tool which, whatever its limitations, is in practical terms readily available and usable.
- Given the present "state of the art", *environmental* or *ecosystem* planning on any but the most "micro" scale remains conceptually vague and presents a number of legal and other practical difficulties, and in these circumstances any attempt to put it into practice would be likely to dissolve into its components. Thus the fundamental purpose of achieving comprehensiveness would be defeated and the attainment of land use planning goals delayed rather than expedited.
- Perhaps most important, a central thesis of this paper is that because land in the sense of terra firma is so fundamental to all forms of life, to social



organisation, and to economic activity, planning its use is potentially a most valuable instrument for achieving sustainable development without any broadening of the concept; and that we already possess a great deal of the legal power, many of the administrative mechanisms, and the experience to make effective use of this instrument.

The three dimensional ecological context of the earth's two-dimensional surfaces cannot be neglected, for whatever humans do *with* land they do *to* sectoral ecosystems as components of the planetary ecosphere. Nevertheless, this paper proposes that we should start where from a practical point of view we stand (if the expression may be permitted) on solid ground, tackling initially the planning of land *in an ecosystem context* rather than the planning of land *as ecosystem*. The definition of land and the scope of land use planning will evolve with the growth of our knowledge and experience. It is hoped that the paper itself will demonstrate that this step-by-step approach provides both a sufficiently heavy agenda and the prospect of important accomplishments.

Land Use Planning

What do we mean by land use planning? Each of the words — "land", "use", "planning" — has different connotations to, let us say, a real estate developer in downtown Vancouver, a Saskatchewan wheat farmer, a national park superintendent, a grape grower on the Niagara Peninsula, and a Dene trapper in the Mackenzie Valley. In fact the substance and process of land use planning are likely to differ substantially in detail in each of those situations.

But in each case what is implied, in a general sense, is the idea of *making considered decisions about how people should make use of (or leave unused) some part of the earth's surface, having regard to known and expected circumstances and to given aims and/or criteria.*

Land use planning is not, however, a set formula, not a tidy package of knowledge and skills made up according to a single recipe. The components of a particular land use planning program cannot be borrowed intact and reassembled as before for use in a different situation. Land use planning is an approach to certain kinds of problem, a way of organising ideas, even, as an eminent Canadian teacher of planning used to put it, a point of view. That is why this paper discusses such an apparent diversity of activities.

Land use planning tends to be equated with the production of "plans": conventionally, brightly-coloured graphic

displays featuring a desired set of physical arrangements at some future point in time. But it is more properly thought of as an ordered procedure for making decisions as to how land should be used, a procedure in which "the plan", including written policies, standards and criteria, provides guidance. As a general rule the preparation and use of this material — the "planning process" — should involve the following elements:

- *explicit goals*, a goal being a desired state or condition embodying consciously chosen values and priorities;
- *identification* of land-related problems and issues;
- *anticipation* — attempting to foresee and allow for changing circumstances and future needs and problems;
- *comprehensiveness*, an over-used word meaning, here, both taking into account as far as possible all considerations and all information relevant to the goals and issues with which the program is concerned, and involving all land-related public programs and the agencies responsible for them;
- *continuity over time*, recognising the need for modification, adaptation and revision to respond to changing circumstances;
- *systematic application*, following a thought-out procedure, but at the same time with the — *flexibility* to be capable of adapting to special or unforeseen situations;
- *responsibilities* that are clearly defined and based on ultimate political authority;
- *opportunities for participation* by those involved or affected, including —
  - land users and occupants,
  - all public agencies having land-related responsibilities, and
  - those who will be charged with realising the plans;
- *options* provided for the ultimate decision-takers, with a clear understanding of their implications;
- *awareness of the means, limitations and costs of the implementation* of plans, incorporated from the very first.

The last point is sometimes neglected, but it is quite as important as any of the others because a land use plan is not self-fulfilling. If it does not take account of the means available for putting it into effect, it is no more than a statement of good intentions.

These means will vary in nature and effectiveness according to circumstances, but in general they fall into three categories:

- *Regulation of the private use of land*, especially the extent, location, nature and intensity of land development.
- *Guidance to public agencies* as to the nature, location and timing of their operations, such as the construction of roads and other physical facilities and the management of resources.
- *Coordination of land-related public programs*, including both regulatory and developmental activities.

In summary, then, a properly conducted land use planning program will normally include the following principal stages:

- *gathering information and identifying issues,*
- *establishing goals,*
- *developing and evaluating options (with effective participation by all affected interests), including implementation programs,*
- *putting into effect program coordination and other means of plan implementation,*
- *continuous monitoring, periodic review, and eventual revision of the plan.*

The Limitations of Land Use Planning

While this paper argues that land use planning could contribute substantially to the achievement of sustainable development, it does not go so far as to assert that even the best of land use planning systems would be enough to secure sustainability on its own.

In the final analysis land use planning is only a tool to be employed as society dictates and which can only be as effective as society permits. Achieving sustainable development therefore will require reforms in public and business attitudes, in policy and policy-making, in economic theory and planning, in administrative and institutional structures and processes, that go well beyond the utmost scope of land use planning.

Moreover, even the best of land use planning systems can accomplish nothing without the means of translating plans into reality. The line between land use planning and land management is a thin one and often blurred, but the distinction between the two processes and at the same time their necessary complementarity must be recognised.

It is only through action programs and day-to-day decisions that plans get implemented: land use planning is not to be seen as a sort of free-standing magic formula, but as an intermediate stage in a continuum extending from societal goals to particular administrative acts.

The following pages will provide examples of the use of land use planning in Canada in order to illustrate its potential utility, subject to these qualifications, in the quest for sustainable development, and to suggest ways in which this potential contribution could be more fully realised.

3. Land Use Planning in Canada: A General Perspective

3.1 Land Use Planning in Canada in the 20th Century

Early Land Use Planning

Land use planning has been a feature of Canadian history almost from the beginning of European settlement. From Samuel de Champlain in the early 1700s until the present century, explorers and surveyors not only mapped the country but noted natural resources and lands suitable for settlement. The Royal Instructions to Governor Murray following the Treaty of Paris in 1763 expressly required him to inform himself about the quality of the land in the newly acquired territory and its suitability for agriculture and timber cutting, as well as giving directions for the layout of townships "having, as far as may be, natural boundaries extending into the country and comprehending a necessary part of the river..." [ref. 52]. Across the country, from Louisbourg to New Westminster, urban planners, many of them military officers, from the 18th century on also left a permanent imprint on our landscape.

The Early 20th Century

The last decades of the 19th century were a period of enormous change in Canada. Following Confederation in 1867 and the completion of the first transcontinental railway in 1885, farming, logging and mining spread rapidly across the country. At the same time, a still predominantly rural and resource-based economy and population were becoming increasingly urban, and most of the settled areas had been organised into municipalities. Some people were beginning to realise that the stock of timber and minerals, though vast, was not limitless; that much of the land settled by would-be farmers was barely fit for cultivation; and that poverty, hardship and disease were the common lot in mining towns and many rural areas.

Influenced both by the "Garden City" movement in Britain and by the civic reform movement in the United States as well as by the practical problems they faced, the councils of fast-growing cities were becoming increasingly conscious of the need for orderly planning.

These circumstances gave rise to two important developments in the early years of the present century. Provincial governments began to enact legislation enabling local councils to prepare plans for their continuing growth and to impose controls on land use and development within their boundaries (and, in at least one case, beyond them), and land use planning began to be an accepted, if by no means universal, function of town councils. And in 1909 the federal government, following the lead of the United States, created a Commission of Conservation.

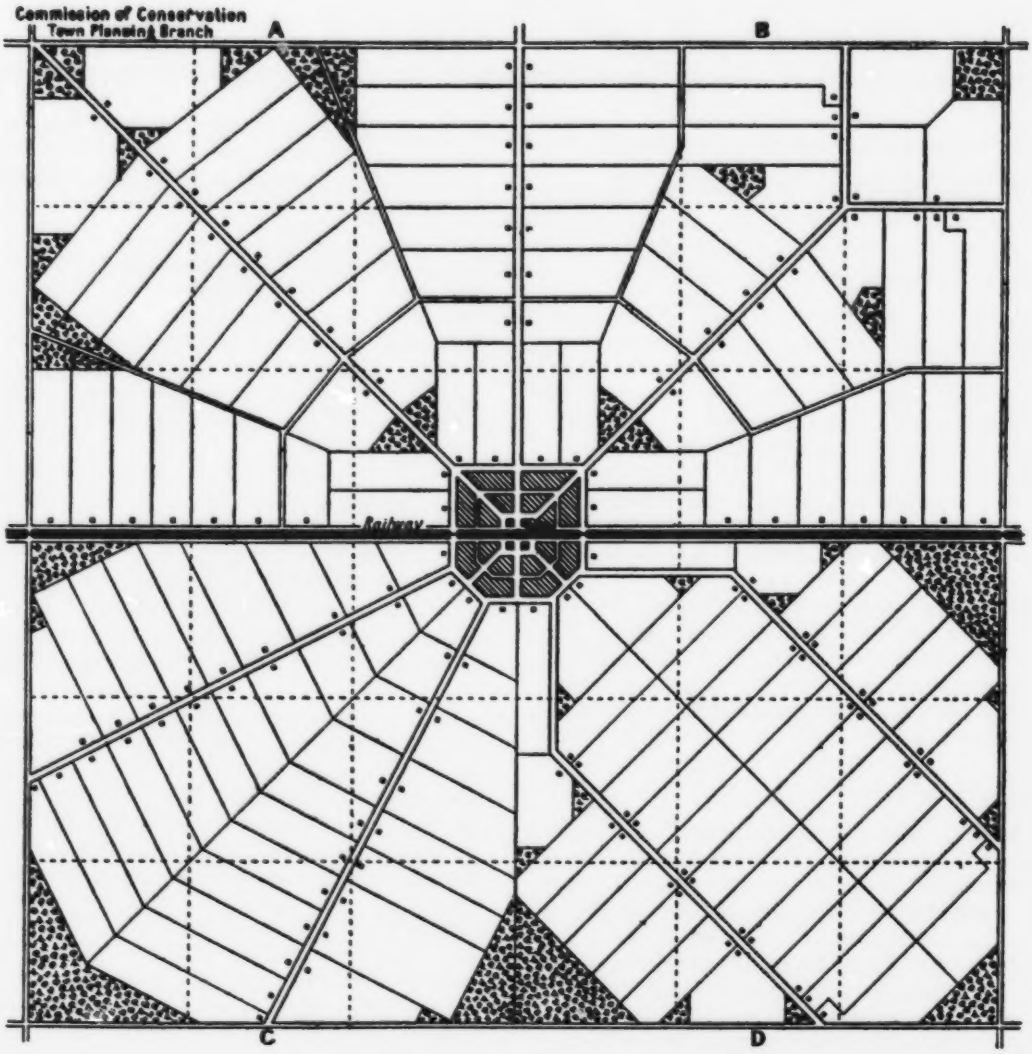
This is not the place for a detailed account of the remarkable work of the Commission during its 12-year lifespan; that can be found elsewhere [refs. 14, 50]. Suffice it to say that its work embraced not only resource conservation and wise rural land use but urban planning and public health: all of these were seen as discrete but nevertheless closely related aspects of the wellbeing of the body politic.

Especially remarkable is Thomas Adams' 1917 report to the Commission on *Rural Planning and Development* [ref. 12], much of which remains pertinent today and which indeed contains passages that might almost be excerpts from the Brundtland Report [ref. 55] of 70 years later. (Unfortunately, the intended companion volume on urban planning and development was never published.)

Inter alia, Adams' recommendations included abandoning the standard rectangular layout of roads and landholdings in favour of plans which "... have regard to the physical and economic conditions of the territory [and to] securing healthy conditions, amenity, convenience and economic use of the land" [ref. 12, p. 71]; reform of property taxation and assessment to discourage speculation and promote better use of land; promoting economic and social development in rural areas; improved and better coordinated government administration of natural resources; and general adoption of provincial planning legislation. (The Sixth National Conference on City Planning, held in Toronto, had discussed a model Canadian Town Planning Act in 1914.) All of these except the last remain pertinent today.

Neither Adams nor the Commission itself gave much attention to the conservation of "nature" per se, but the same era saw a growing interest in outdoor recreation and the protection of scenic areas. Once more following a U.S. example, Canada established six national parks between 1885 and 1914; Ontario's Algonquin Park was created in 1893.

Looking back from near the end of the 20th century to its early years one can only be enormously impressed by the advances in thinking and practice in the two decades just before the First World War and even during the war itself. The origins of much in contemporary land use planning, conservation, urban planning and public health programs can be traced to that era; what we are now only starting to rediscover is the essential unity that our predecessors recognised three-quarters of a century ago.



PLAN FOR
AGRICULTURAL SETTLEMENT
Area, 36 square miles
Scale
0 ½ 1 Mile
Roads *Town Area* *Sites of Farm Buildings*

This diagram shows eight different methods of planning quarter sections of townships. Imaginary areas are taken and roads are planned to secure (1) close settlement of the farm buildings, (2) convenience and directness of access to the town area and station, (3) reduction in length of road, (4) use of swampy and rocky land for timber reserves. The buildings are also grouped so as to obtain the best social facilities and economic use of wells for water supply. In the town area it is assumed there would be good facilities for obtaining education, medical advice, and recreation — and an organized co-operative agency under Government auspices to supply farm implements, seeds, etc., to the farmers and to collect and distribute farm produce. On this diagram the total length of road provided to give access to all the farms is 46 miles, of which 11 miles are secondary and not essential. Under an ordinary rectangular division plan the total length of road is 54 miles. In addition to the saving in road construction and maintenance, which would be effected by proper planning, there would be the great saving in time and team labour for the farmer, owing to the greater nearness of the farms to the centre. Fewer and more direct roads mean better roads, because it is possible to concentrate a given expenditure on a smaller area.

From: Thomas Adams, Rural Planning and Development

The Mid 20th Century: Urban and Suburban Planning

With the end of the war the tide turned. The postwar boom brought continuing industrialisation, rapid urban growth, and widespread land speculation; the Depression followed. Neither set of conditions was favourable to ideas like planned, prudent use of land and resources. The Depression years did, however, produce one initiative with an important legacy, the Prairie Farm Rehabilitation Act of 1935, which provided for conservation programs and was also the precursor of the regional economic development programs that began in the '60s.

The end of the Second World War gave land use planning a new impetus in two ways. The war fostered an idealism in which, briefly, people and governments could envisage and strive for a more equitable and humane society, and could think in terms of applying the war's lessons in planning and organisation to the creation of such a society. This idealistic vision clearly inspired the reports of the Advisory Committee on Reconstruction [ref. 13], appointed by the federal government while the war was at its height. The reports themselves had an important influence on some aspects of postwar policy, but idealism was soon overtaken by the exigencies of another postwar boom and, more particularly, by an enormous demand for housing, accentuated by the backlog left by the Depression.

Across Canada cities and towns grew at a tremendous rate. However, the lessons of the '30s, when many municipalities went bankrupt as a result of the land speculation of the '20s, were not entirely lost on provincial and municipal governments. New provincial planning enabling acts were passed and old ones refurbished. A reluctant willingness on the part of local councils to accept the necessity of some measure of control over the subdivision and use of land was supported also by the provisions of the 1947 National Housing Act, as amended repeatedly in later years, and by the policies of the Central (now Canada) Mortgage and Housing Corporation (CMHC).

The Act and the Corporation were the offspring of the Advisory Committee on Reconstruction's (Curtis) Subcommittee on Housing and Community Planning, and in a sense CMHC became the latter-day Commission of Conservation. Its prosaic name does not convey the encouragement it gave to improved urban planning through the imposition of minimum development standards as a condition of mortgage financing, but perhaps even more important, through research, advice, funding, and the training and recruitment of professional planners.

But CMHC's central mandate was housing, not conservation or rural land use, and if anything its other programs (such as urban renewal and assistance for the provision of water and sewers) reinforced the overwhelming urban orientation of Canadian land use planning in the postwar years. This was an era in which any rural areas included in municipal plans were usually disposed of by designating them as "agricultural" or "future development", imposing a restriction on subdivision, and thereafter ignoring them.

It was soon realised that the postwar surge of urban growth was not contained by city limits and that planning for it could not effectively be carried out just by individual municipalities, many of which in any case lacked both the interest and the resources.

The response of provincial governments was of two kinds. Starting with Toronto in 1953, several of the largest urban concentrations in Canada acquired metropolitan or (in Ontario) "regional" governments embracing the entire urban and suburban area. In other parts of the country, notably in the maritime and western provinces, the largest cities were surrounded by extensive planning areas. (The precedent was in fact set in the Maritimes half a century earlier, when the City of Saint John, N.B., was given planning jurisdiction outside its corporate limits.)

These special-purpose regional planning agencies differed from province to province in nature, constitution and authority, but essentially they were intermunicipal bodies, funded by municipal and provincial contributions, with legal powers to prepare and adopt regional land use plans. In many cases their effectiveness was severely limited by the insecurity of their financial base and their restricted powers, and they were eventually discarded in British Columbia and Ontario (the joint planning areas of the latter province were not in fact regional in scale anyway). But in other provinces, notably Alberta, which took the lead in establishing it after the Second World War, the system flourished and was extended to rural as well as urban areas.

With the spread of forms of metropolitan or regional government as well, in most provinces there is now some means of conducting land use planning on a scale larger than that of the individual municipality. No two provinces have adopted quite the same set of arrangements, but in every case (with the partial exception of Quebec) the system is essentially an extension of municipal government and is strongly oriented to municipal interests.

The Mid 20th Century: Rural and Resource Planning

In the postwar years, however, there was a parallel growth of interest in the planning of land and resource use beyond the urban fringe. This developed through a number of channels. One was, in effect, the reciprocal of conventional urban-centred land use planning: concern about the building over of prime farmland and about the much more extensive "urban shadow" effect on agriculture, arising from the fact that most of Canada's principal cities are sited on its best agricultural lands.

The Reconstruction Advisory Committee's Subcommittee on Conservation and Development of Natural Resources had recommended regional planning for the balanced development and conservation of natural resources, but unlike its Housing and Community Planning counterpart this report had little immediate effect. Nevertheless, influenced by the work of the U.S. National Resources Planning Board (a product of the New Deal) and the unofficial but respected Resources for the Future, provincial governments gradually moved towards some measure of planning of the use of Crown lands. "Multiple use" and "sustained yield" were usually the twin themes.

Competing demands for water resources, for municipal water supply, for power generation, for recreation, for wildlife conservation and for a variety of other uses, were presenting a growing problem. In 1954 Hurricane Hazel forcefully brought home to Ontario the connection between water and land use and the need to coordinate their management, and led to the establishment of conservation areas across most of the southern part of the province.

These concerns and others were brought sharply into focus at the "Resources for Tomorrow" conference of 1961, which did much to stimulate awareness of the need for better planning and more prudent conservation of resources, including the land resource [ref. 49].

The Present Situation

Unfortunately, while Resources for Tomorrow was very successful in what would soon afterwards be called "consciousness-raising", it could do little to bridge the fundamental jurisdictional divisions that fragment land use planning in Canada.

In keeping with the tradition of municipal autonomy acquired from both Britain and the United States, land use planning within municipal boundaries has always been regarded as a municipal prerogative, though subject to some form of ultimate provincial control as well as to the right of both "senior" governments to ignore municipal plans entirely. It has therefore been governed largely by the considerations which preoccupy local councils: growth, commonly regarded as desirable in itself; expanding the assessment base; road and transit needs; servicing costs.

Unorganised territory outside municipal limits, most of it Crown land, is subject to an entirely different land use régime dominated by the provincial department(s) responsible for the management of natural resources. Despite historical precedents and the recommendations of the Committee on Reconstruction in 1944, systematic planning of the use of Crown land was largely neglected until the '70s. At first its only goal was to achieve the highest possible economic return from forest products and minerals, though tourism and outdoor recreation came increasingly to be recognised as another important economic asset. In most jurisdictions this state of affairs remains dominant.

The planning of water use has always presented special problems due to the overlapping jurisdictions and competing interests of federal, provincial and municipal governments and other public and quasi-public agencies, particularly hydro authorities. In some cases, notably but not exclusively the Great Lakes, international issues are involved as well.

Attempts have been made to overcome these problems by means of such devices as federal-provincial river basin agreements under the Canada Water Act, and special agencies such as the International Joint Commission, Saskatchewan's Water Corporation, and Ontario's conservation authorities. Nonetheless, authority over Canada's water resources remains a jurisdictional patchwork which is poorly suited to planning for diverse, changing and growing demands and pressures.

New Ideas

Perhaps the first real innovation in Canadian land use planning since Thomas Adams was once again an American import. Environmental impact assessment (EIA), introduced in the U.S. by the National Environmental Policy Act of 1969, was adopted by the Canadian government in 1973 in the form of the Environmental Assessment and Review Process, or EARP.

During the next decade most of the provinces adopted at least a rudimentary form of EIA process, the most comprehensive and stringent being established in 1975 by Ontario's Environmental Assessment Act. EIA is not "planning", in the sense that typically it does not predetermine the use of land but rather responds to a proposal to use a particular parcel or area for a specific purpose, but it is planning in the sense of trying to anticipate and avert undesirable consequences instead of dealing with them after the fact.

Potentially, the two processes are in fact admirably complementary, and in practice the line between them is often blurred. Unfortunately, jurisdictional splits are a barrier to the full realisation of this potential because, for no objectively valid reason, EIA has come to be seen as either a federal or a provincial responsibility while land use planning is seen as a function of municipal government.

Land use planning and EIA are therefore usually carried out independently of each other, though it is possible for environmental studies and requirements to be introduced into municipal planning procedures independently of EIA legislation.

The most recent major development related to land use planning is the provincial conservation strategy, now introduced in Prince Edward Island and being more or

less actively pursued in some other provinces (again led by Alberta) and in the two northern territories. "In essence", to quote the *Prospectus for an Alberta Conservation Strategy* [ref. 48], "a conservation strategy is a framework that provides direction for the sustainable use and management of resources for the benefit of all." Thus the adoption of a conservation strategy by a government amounts to establishing a policy which to some extent governs the use of land regardless of planning jurisdiction.

The idea can be seen as in part a reaction against the land use planning modes that have prevailed during the past 40 years or so, preoccupied on the one hand with the management of urban growth and on the other with the exploitation of natural resources, but in neither case treating the *conservation* of resources as a primary goal.

Comparing the land use planning scene in Canada today with that of 70 years ago, we find a wide range of activity but not many basic ideas that would have been new to Thomas Adams, with two major exceptions.

One of these is represented by the conservation strategy: it is the definition of conservation in terms not just of prudent use of economic resources but also as including the protection of non-economic values, and ultimately as a matter of preserving the ecosphere itself. That can perhaps be regarded as progress, though it is unlikely that it would have occurred to Adams and his contemporaries that so sweeping a view of conservation would ever be necessary.

The other development that might have surprised Adams is the emergence of the region as, increasingly, the principal geographical unit of land use planning. Planning regions come in many shapes and sizes determined according to many different criteria, but in almost every form of land use planning it has now been recognised that the arbitrary boundaries of a city or a county, or even a province, will not serve for planning purposes.

It is in this extension of land use planning both in substance and in geographical scale that we can see the direction of the future. The challenge now urgently confronting us is to integrate those natural allies, land use planning and environmental impact assessment, into the coherent policy set that conservation strategies can help to provide, and to apply them systematically within a comprehensive spatial framework.

In effect, this would represent the rebirth of the "comprehensive regional plan" which many land use planners of a generation ago regarded as their professional ideal, but which more recently has been generally decried as unrealistic by a more conservative profession now well entrenched in the provincial and municipal bureaucracies. Increasingly, the goal now appears not just realistic but indispensable.

3.2 The Federal Role

In Canadian constitutional theory land use planning is usually considered to be exclusively a provincial preserve, either to be carried out directly or to be delegated to municipalities.

The reality is quite otherwise: indeed, it can be argued that the federal influence has on the whole been greater than that of the provincial governments, which in general (though with a few notable exceptions) have been reluctant to assume an active land use planning role except in relation to their own direct responsibilities. The enormous influence of two federal agencies, the Commission of Conservation and the Central/Canada Mortgage and Housing Corporation, on the development and present character of land use planning in Canada has already been indicated.

Here are a few more examples of the role of the federal government:

- In certain cases the federal government itself is actually the leading actor on the land use planning stage.
  - Until the establishment of regional government on both sides of the Ottawa River in the late '60s the National Capital Commission was effectively the regional planning agency for the entire National Capital Region, in both Quebec and Ontario.
  - The federal government introduced the Northern Land Use Planning Policy and is one of the participants in the planning activities currently being carried out in both northern territories under the policy.
- The series of regional economic development programs which followed the Prairie Farm Rehabilitation Act in the postwar years were not land use planning programs, and indeed they arguably paid (and pay) insufficient attention to land use per se; but they have had substantial effects on land use throughout the country nevertheless. In 1987 the federal government announced plans to pursue a soil conservation program in cooperation with the provinces, using the expertise of PFRA personnel.
- From the Geographical Branch of the former Department of Mines and Technical Surveys to the recently and regrettably dissolved Lands Directorate of the Department of the Environment, the federal government has been a unique source of nation-wide information on land, land use and land use planning. The Canada Land Inventory is only the most notable example.
- The DOE has been a major influence on land use planning in other ways as well, as for example in the designation of wildlife reserves, ecologically

significant areas and national parks, and in its active promotion of conservation strategies.

- Under the Canada Water Act and other legislation, the federal government has been an active participant in the management of water use and in water-related land use planning.
- The federal government introduced environmental impact assessment into Canada.

If to these examples we add the activities and authority of federal departments and agencies with regard to, inter alia, airports, railways, pipelines, ports and harbours, agriculture, forestry, fisheries and energy, not to mention the implications of fiscal and financial policies, it is clear that the federal government's ability to shape land use in Canada is substantial and diverse (see ref. 17), and its influence on land use planning, even if for the most part indirect, has been considerable. It was in recognition of these facts that the Federal Policy on Land Use was adopted in 1980.

Therefore, although land use planning is constitutionally a provincial matter where local government and natural resources are concerned, the federal government cannot legitimately use this as grounds to disavow a major leadership responsibility in the field.

4. Land Use Planning in Canada: Some Examples

4.1 Municipal and Intermunicipal Planning

Essentially, municipal land use planning governs the municipality's own activities related to land development (layout of roads, provision of water and sewerage services, planning of transit services, etc.), together with the control of private land use and development [ref. 5]. Since it is carried out under provincial jurisdiction, its details vary from province to province.

The description which follows is a generalisation which is broadly applicable across Canada but should not be taken as a reliable account of the planning enabling legislation or practices of any particular province.

Nor should it be inferred that every municipality in Canada actually makes effective use of its statutory planning powers, which generally remain permissive rather than mandatory. Most urban municipalities now make some attempt at land use planning, though quality and effectiveness vary considerably; many rural municipalities still neglect planning altogether. But in general the situation at the local level is gradually improving, and furthermore every province now has some kind of instrument for joint planning of adjacent municipal jurisdictions. In this paper, the term "municipal planning" includes intermunicipal planning unless otherwise specified.

The objectives of municipal land use planning are in general directly related to the responsibilities and interests of municipal government. In essence they are concerned with the relationship among:

- the pattern of private land use and development,
- the consequent demand for municipal services and the costs of providing them, and
- the "assessment base" on which the municipal exchequer is heavily dependent.

Crown lands, resource management and federal and provincial government activities, even within municipal boundaries, are not normally subject to municipal control. Environmental protection, including environmental impact assessment, is usually regarded as primarily a federal or provincial responsibility, though municipalities do have some authority in environmental matters deriving from their responsibilities in the field of public health.

Unfortunately, the dominant role accorded to quasi-judicial tribunals in Ontario and some other provinces has made the formal municipal planning process in those jurisdictions legalistic and adversarial in a manner quite out of keeping with the true spirit and aims of land use planning.

The Instruments of Municipal Planning

The general plan is the basic municipal planning instrument (known by different names in the various provinces: "official plan", "official community plan", etc.). In some provinces the enabling legislation gives the municipality a great deal of latitude as to the content of its general plan; in others, notably Quebec, its requirements are quite specific.

Typically, the general plan sets out a broad pattern of land use (such as high and low density residential areas, central business district and other retail and office areas, agriculture), indicates the locations of future public facilities such as schools and parks, and establishes the pattern of main roads. The plan usually incorporates written policies, explanatory material, etc. Some form of public involvement is now usually required before a general plan is formally endorsed or altered by the municipal council, and the approval of the provincial government or of a provincial board is required before it can take effect. Once the plan is approved, the municipal council is not compelled to carry out its provisions but may not take actions inconsistent with the plan.

In some provinces, the provisions of a municipal general plan may be governed in part either by a regional plan or by provincial policies, or both. These constraints are discussed later in this paper.

Subject to the general plan, the municipality has at its disposal two principal instruments for regulating the use of private land:

- *The zoning by-law*, which specifies in detail the purpose for which any parcel of land may be used and on what conditions, and the nature and intensity (usually in terms of a ratio of floor space to site area) of the development which may take place on it.

  The zoning by-law, which is enacted and administered by the local municipal council, is used for day-to-day control within the broad framework of land use policies set out in the general plan.

- *The authority to control the subdivision of land.* Unlike zoning, in most provinces this authority does not rest exclusively with the municipal council but is subject to some form of review either by an intermunicipal or regional body or by the provincial government.

  Subdivision control is the key legal instrument governing the conversion of rural land to urban use: once land is subdivided into small lots it is usually effectively lost to the rural economy whether or not the lots are immediately built on.

Within this general framework the variation in the actual land use planning practices of individual cities, towns and rural municipalities is enormous. A few use their planning authority in sophisticated ways to achieve a range of social, economic and/or environmental ends; others, probably the great majority, are concerned mainly with workaday matters like traffic flow, keeping servicing costs down, and encouraging economic growth; others effectively do not plan at all.*

In the absence of firm direction from provincial governments, this lack of consistency creates a very serious weakness in Canadian land use planning taken as a whole, because to a very large extent it is at the local level that effective legal powers in land use planning reside.

Intermunicipal Planning: Alberta

Intermunicipal (often called, accurately or otherwise, regional) planning is of special relevance to the quest for sustainable development because it combines the following characteristics: regional or at least sub-regional geographical scale; legal authority; and, usually, linkage between provincial land use policies and local plans. Brief descriptions of three provincial systems therefore follow.

The oldest surviving system of intermunicipal planning is Alberta's, originating in 1950. It is also arguably the best in terms of its combination of the scale of individual planning regions and the coverage of the system as a whole.

Each of the province's larger cities is at the centre of a planning region which extends far beyond its suburbs to embrace an extensive rural hinterland; collectively, the regions now include most of the province.

The regional planning commissions are now made up exclusively of municipal representatives. Each commission is legally required to prepare a regional plan, which, after public hearings, is approved by the Alberta Planning Board (comprising both appointed citizens and senior civil servants) prior to final approval by the Minister of Municipal Affairs.

The guidelines prepared by the provincial government specify that the regional plan is to be a general policy framework for detailed municipal planning activities, and once ministerial approval is given the regional plan governs the individual plans of the municipalities within the region. Thus the Alberta Planning Board can and does use the regional plans explicitly to ensure that municipal land use planning respects provincial policies impinging on land use (including environmental protection policies), a necessary if not sufficient condition for the implementation of such policies. However, the converse does not apply: regional plans do not constrain government programs.

Intermunicipal Planning: Quebec

Since 1979 Quebec has had an intermunicipal land use planning system similar in some respects to Alberta's. Its coverage is even more comprehensive, effectively excluding only the three urban communities, or metropolitan municipalities — Montreal, Quebec and Outaouais (Hull) — which plan under separate statutory authority, and parts of northern Quebec subject to agreements with aboriginal peoples.

However, most of the regional county municipalities (RCMs) are much smaller than Alberta's planning regions. Their boundaries were determined by the choice of the municipalities themselves as to how they wished to be grouped and to some extent reflect the boundaries of the historic counties. The RCMs also have certain responsibilities besides land use planning.

But the most significant difference between the Quebec and Alberta systems lies in the relationship between the provincial government and the land use planning programs of the RCMs. The legislation specifies in some

*An award-winning example of the use of a municipal general plan to protect the natural environment unfortunately came to the author's attention too late to be described in this paper. However, an account of the Alpine Area Official Community Plan of the District of North Vancouver, B.C., can be found in *Plan Canada* 28.6, September 1988, pp. 159-161.

detail, as its Alberta equivalent does not, what an RCM land use plan is to include, and provincial departments are involved in its preparation; on the other hand, the provincial government is bound by the provisions of the plan and even by the interim controls which are in effect prior to its approval. Thus there is a much more direct involvement on the part of the provincial government than is the case in Alberta, and effectively the land use plans of the RCMs are not just intermunicipal but provincial-municipal plans, with the potential for being much broader in scope than land use plans constrained by the customary limits of municipal authority.

Intermunicipal Planning: Ontario

Ontario has no comparable system of intermunicipal planning, but has reorganised municipal government in the "Golden Horseshoe" and some other parts of the province into "regional" municipalities. Some of these are not in fact true regions but merely revamped versions of the former counties: the "Greater Toronto Area" is divided among five regional municipalities and Metropolitan Toronto.

The regional councils are intermunicipal bodies in the sense that in most cases they consist of persons elected to the local or "lower tier" councils, but unlike Alberta's regional planning commissions and Quebec's RCMs they are full-blown municipal governments, dividing responsibilities with the local councils. In all but two cases both orders of municipal government carry out land use planning.

Local "official plans" must conform to the regional official plan, and in most cases must be approved by the regional council. In turn, the regional official plans must be approved by the province, and they must respect officially promulgated provincial "policy statements". Statutory requirements as to their content are very general, however, and formally the provincial government remains very much at arm's length in their preparation.

Since no rules are laid down in the legislation, a regional plan may deal with whatever aspects of physical development under municipal jurisdiction the regional council sees fit to include. In practice, such plans deal mainly with the control of urban expansion and with structure planning, that is, the general pattern and form of urban development in relation to the major transportation system and other trunk services. However, some regional official plans, such as those of the regional municipalities of Ottawa-Carleton and Waterloo, devote considerable attention also to conservation and such matters as the protection of environmentally significant areas.

Intermunicipal Planning: Comments

The fundamental weakness of intermunicipal planning lies precisely in the fact that it is inter*municipal*. Except in Quebec, this means in the first place that it is confined to matters under municipal jurisdiction and cannot deal, for example, with the disposition, use or management of Crown land.

In the second place it means that a land use plan must represent some sort of consensus, if not unanimity, among a number of different municipalities with different interests and perceptions. Inevitably, the outcome is apt to be a rather weak compromise, a lowest-common-denominator document, or at worst — as has happened in some cases — inability to produce a plan at all. Third, the fact that an intermunicipal plan is constrained by municipal powers and oriented towards municipal interests almost rules out the possibility of an ecosystem-based approach to appropriate land use, for which a regional framework is otherwise well suited, especially when the planners themselves are usually neither oriented towards such an approach nor appropriately qualified (though this is changing).

Nevertheless, experience shows that intermunicipal planning can be constructive and effective within its legal limitations. It has one great asset: an effective "tool kit" in the form of well-established and recognised legal powers.

Municipal Planning and Sustainable Urban Development

Discussion of sustainable development in Canada is usually couched in terms of the relationship between economic growth and resource use on the one hand, and resource conservation and protection of the "natural" environment on the other. It thus tends to exclude the "built" environment and the notion of sustainable *urban* development, although most Canadians are now urban-dwellers and cities are the locus of most economic activities.

Sustainable urban development might be defined as a process of change in the built environment which fosters economic development while conserving resources and promoting the health of the individual, the community and the ecosystem (recognising that in terms of sustainability as in other matters, the urban environment cannot be separated from the region of which it is a part).

The relevance of municipal planning to these ends may be more apparent than it is in connection with sustainable development in a more global sense, and indeed urban planning theory and practice have been strongly influenced by such aims as conserving resources and reducing atmospheric pollution.

Thus Canadian cities have policies to

- limit building densities,
- reduce motor traffic and encourage walking and transit use,

- segregate or eliminate polluting or health-threatening industries,
- provide "green spaces" to predetermined standards.

The recent "energy crisis" made urban design for energy conservation suddenly fashionable (for example, orientation of buildings to obtain maximum benefit from sunlight). Programs to make the central areas of cities more attractive and livable, while certainly not undertaken exclusively for reasons of conservation, do tend to reduce per-capita energy consumption.

The Federation of Canadian Municipalities, with other bodies including the Canadian Institute of Planners, is currently sponsoring a national "Healthy Cities" program with aims very close to sustainable development.

Unfortunately, these commendable efforts are offset and sometimes negated by narrow, short-term "practical" local concerns, usually related to the desire for growth which dominates municipal policy perhaps even more than it does public policy in general. To cite only two examples:

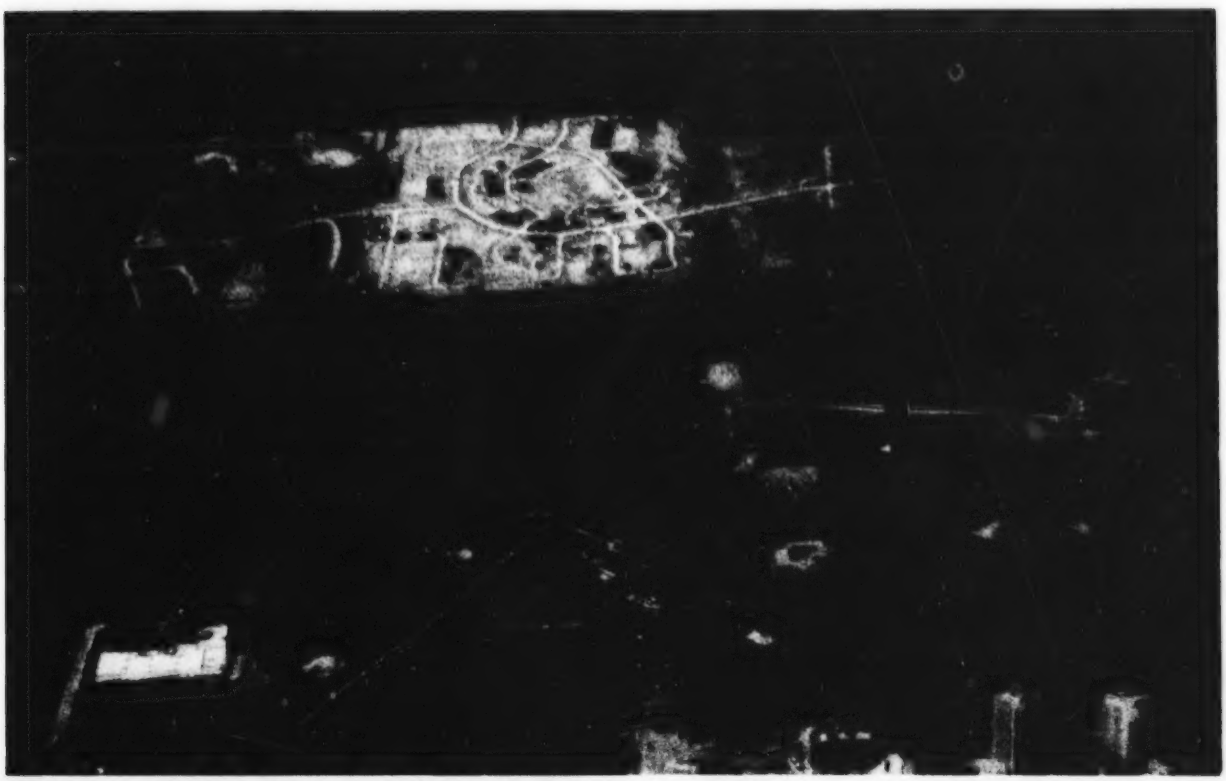
- While many central cities are encouraging the "recycling" of aging low-density residential and obsolete industrial areas for more intensive use, their suburbs simultaneously encourage the spread of unbroken expanses of detached single-family houses, costly in land and services and dependent on private cars for transportation because they are uneconomical for public transit (to say nothing of their social failings).

  In the name of municipal political and fiscal autonomy, provincial governments generally make little effort to influence such policies.

- The "garbage crisis" which is now emerging as a serious environmental threat in the vicinity of some Canadian cities is the product of a many-faceted policy failure extending through all levels of government.

  Part of this failure, however, can also be attributed to the local obsession with growth and the reluctance adequately to weigh its consequences. It is also attributable to the assumption that the problem could be "disposed of" by moving it somewhere else in the form either of incinerator emissions or of "sanitary" landfill.

The attempts of some municipal councils and planners to shape an urban environment more congenial both to the ecosystem and to the social system deserve more attention and more credit than they have generally received either from environmentalists or from politicians and officials of the "senior" governments. However, it is very clear that without firm policy direction from those same governments, coupled with support and a suitable political and administrative structure, the nature, scope and success of such efforts will remain severely limited by the preoccupations and constraints of municipal government.



Which is worth more: The supermarket or the first class farmland? Photo: G.W. Manning

4.2 Crown Land Management and Planning

There are northern municipalities whose generously-drawn boundaries include substantial tracts of Crown land, and there is privately-owned land outside municipal jurisdiction. But as a generalisation the land of Canada can be thought of as falling into two categories:

- privately owned, mainly urbanised or farmed, and subject to municipal land use plans and controls; and
- Crown-owned, with little permanent occupation, and subject to land and resource management by a provincial or (north of the 60th parallel) by the federal government.

(A new third category, land under aboriginal ownership or subject to special aboriginal rights under claim settlements, will be ignored for the moment.)

It is worth noting that municipal land policies and regulatory activities are termed "planning" while those of the federal and provincial governments are usually referred to as "management". In part, of course, this simply recognises that unlike the "senior" governments, municipalities are not in fact responsible for the actual management of most of the land under their jurisdiction. But it also reflects the fact that planning in any but a very restricted sense has only fairly recently entered into the administration of Crown land and resources.

For the purposes of this paper at least, there is no clear-cut distinction between the management and the planning of Crown lands (or water); management involves planning to the extent that it is forward-looking and reflects a diversity of interests. This section will consider how this is done in three provinces.

To set this in context, here are some of the "commonalities" identified by the Lands Directorate of the Department of the Environment in its review of Crown land management across Canada [ref. 6]. As the study points out, these features do not necessarily apply in all jurisdictions, but they are claimed to be broadly true.

- Administration for Crown lands is distributed amongst several departments in each jurisdiction but usually one department has a dominant role.
- Advice on land management is provided by inter- or intra-departmental committees.
- Public input in decision-making is directly or indirectly obtained in the land management process.
- Ultimately, final decisions are at the discretion of the political structure (usually Cabinet).
- The use of Crown land in accordance with land use policies, directives, environmental impact reviews, and any regional plans is a primary concern.

Each of these considerations is an important element in the planning of Crown land, and the "case studies" that follow have been chosen to provide contrasting examples of their relative weight and the interaction among them in three provinces.

Ontario: SLUP

Nominally applying to the whole province, Ontario's Strategic Land Use Plan (SLUP) process was initiated by the Ministry of Natural Resources (MNR) in the mid '70s primarily as a systematic approach to resource allocation in northern Ontario. Its starting point and foundation was the Ministry's mandate "to provide opportunities for resource development and outdoor recreation for the continuous economic and social benefit of the people of Ontario and to administer, protect and conserve public lands and waters."

On this basis the first stage of the SLUP process was the establishment of terms of reference by the ministry, the collection of information, and the determination of ministry policies and objectives by reconciling those of its individual branches. These objectives essentially took the form of specific sectoral production targets.

A similar procedure was followed at the regional level (Northwestern and Northeastern Ontario). At this stage conceptual land use plans were prepared and economic targets assigned to individual administrative districts. The procedure was again repeated at the district level, where detailed land use plans intended to reach the targets, together with review procedures, were prepared.

In some ways this is a model planning process, starting with a definite goal and proceeding step by step through a predetermined sequence of elaboration and refinement to detailed land use plans.

Its weaknesses arose fundamentally from the fact that SLUP was not a program of the provincial government as such, but was carried out by and largely within MNR for the ministry's own purposes. This meant that the entire program was directed towards quite narrow objectives, largely excluding, for example, ecosystem, wilderness, or scenic values per se.

Furthermore, it was carried out with very limited participation either by other government departments or by residents and users of the land, specifically the Cree and Ojibway of northern Ontario. It was very much a "top down" process; district policies, targets and plans were determined by those of the regions, and theirs in turn were determined by ministry policies and targets.

Finally, the status of the plans themselves, once approved by the Minister, was unclear. The Minister of the day declined to submit the land use plans for the two northern regions to review under the provincial Environmental Assessment Act (see 4.8 below) on the grounds

that they were not formal plans but merely internal ministry guidelines, and subsequently they became known officially as such. The ministry's provincial timber management plan is currently being subjected to the environmental assessment process nevertheless.

Manitoba: PLUPs

In Manitoba, Crown-owned agricultural land is administered by the Department of Agriculture and other Crown land, as in Ontario, by the Department of Natural Resources. In other respects, however, the management of Crown land in Manitoba stands in sharp contrast to the compartmentalised Ontario arrangement.

First, all land in Manitoba, except for the City of Winnipeg, is governed by a set of Provincial Land Use Policies (PLUPs) which govern the activities of all provincial departments and agencies.

Second, while two departments hold the responsibility for actual management, key decisions are made through a system of interdepartmental committees, including

- the Provincial Land Use Committee of Cabinet;
- a statutory Interdepartmental Planning Board of deputy ministers and heads of public agencies, which is the principal forum for interdepartmental coordination in land use matters and for the review and resolution of major land use issues; and
- a Crown Land Classification Committee (CLCC), representing the departments of Natural Resources, Agriculture and Municipal Affairs.

The CLCC has the specific responsibility of planning for the use of Crown lands within municipal boundaries, in cooperation with the municipalities and with provincial government field staff. Land use plans so developed are subject to approval by the Cabinet Committee. (The Manitoba Provincial Land Use Policies and related administrative structures and processes are described somewhat more fully in 4.10 below.)

Alberta: IRPS

In Alberta, the Integrated Resource Planning System (IRPS) incorporates both the systematic nature of Ontario's SLUP and the broad participation characterising Crown land management in Manitoba, though operating differently from either.

The IRPS structure and process are fairly complex, and only the main features will be dealt with here; a detailed description has been prepared by the Lands Directorate [ref. 46], on which this account, though brought up to date, is largely based.

Alberta does not have a comprehensive set of provincial land use policies comparable with Manitoba's (which are indeed unique in Canada). Public (Crown) lands are, however, divided into "white", or unrestricted, and "green" areas. The latter, broadly the northern half of the province apart from a portion of the Peace River region, and the eastern slopes of the Rockies, are reserved for resource and recreational development or for protection.

IRPS is based on six principles, which can be approximately summarised as:

- flexibility,
- rationality,
- inter-agency cooperation,
- collaborative application of expertise,
- comprehensiveness,
- public involvement.

The system regularly involves twelve distinct agencies of the provincial government, of which five are divisions of the Department of Forestry, Lands and Wildlife (FLW) and the other seven consist of the departments of Recreation and Parks, Energy, Agriculture, Tourism, Environment, Municipal Affairs, and Culture and Multiculturalism. The Energy Resources Conservation Board is also a full participant, while other provincial agencies may be involved on a consultative basis.

Generalising considerably, the system as a whole operates at the following levels or stages:

- *Policy direction and final plan approval*: Economic Planning Cabinet Committee.
- *Policy interpretation and advice, interdepartmental coordination, plan reviews*: Natural Resources Coordinating Council (deputy ministers); and Natural Resources Advisory Committee (assistant deputy ministers of participating departments).
- *Program direction, initiation and supervision of planning operations, plan acceptance*: Resource Integration Committee (RIC) (division directors from participating departments and agencies).
- *Plan preparation*: planning team (field staff of FLW, staff of other participating agencies).

Coordination of the process is the responsibility of the Resource Planning Branch of the Public Lands Division of FLW. FLW also has its own internal coordination and review structure.

Plans are prepared at regional, sub-regional and local levels. Priorities are set by the RIC, based on evaluation of proposals from various sources, and approved by the Minister and Deputy Minister of FLW.

Plan preparation follows a definite sequence of steps, of which the first includes identification of concerns and issues, schedule, and procedure for decision-making. The process continues through the identification of resource objectives and policy alternatives, inter-agency negotiation, and preparation of a draft plan, leading to the final plan.

Public involvement is obtained through a permanent advisory committee to the Minister, through consultation between the planning team and interest groups, and through public meetings, newsletters, and whatever other means of communication with the general public seem appropriate.

A key feature of the IRPS process is that it includes well-defined procedures and responsibilities for plan implementation, for regular review of plans, and for plan revision as necessary. (The system of annual and major plan reviews is still in the early stages of operation and will probably be refined over time.) The critical importance of these elements in a land use planning system is thus recognised in the IRPS, as is by no means always the case.

Early difficulties in making IRPS fully effective appear to have been overcome. They were not in any case due to the design of the system, which incorporates most of the key elements of a sound land use planning system:

- A systematic but flexible approach;
- Active participation by all key "actors" at all levels;
- A clear (if perhaps rather complex) chain of command from the political to the working level, providing for policy direction, coordination, and decision-making;
- Provision for public involvement at all stages;
- Involvement of field staff in plan preparation which ensures awareness of the realities of plan implementation.

4.3 Agricultural Land

What is Agricultural Land "Loss"?

In all the extensive body of literature on land use in Canada, the recurrent theme for at least the past 30 years has been the "loss" of agricultural land.

From the research carried out in the '50s by Crerar (on the contraction of agricultural land on the fringes of urban areas across Canada) [ref. 30], Krueger (on the shrinking Niagara fruit belt) [ref. 37] and others, to the most recent Statistics Canada and Lands Directorate publications, the statistics have continued to flow.

The basic facts are clear and unarguable:

- Only a tiny proportion of Canada's vast extent comprises prime agricultural land.
- On these tracts — principally the St. Lawrence Lowlands, southwestern Ontario and the Lower Mainland of British Columbia — Canada's largest cities were built and continue to grow.
- The amount of high-quality land under cultivation is steadily diminishing.

It is not always quite so clear, however, exactly how the facts are to be viewed and the figures interpreted. Does land "lost" include any land that was once under cultivation but is so no longer? Or, at the other extreme, does it just mean former farmland that has actually been built on or blacktopped?

If the former, then the term applies to land that should never have been ploughed in the first place, and to land that is still available to be farmed in the right circumstances.

If the latter, then the proportion of the total supply involved is still relatively small (it has been calculated that the greatest foreseeable extent of urban development in southern Ontario, including such appurtenances as roads and airports, would not physically occupy as much as 10 per cent of the region's fertile land).

Whichever of these interpretations or several others is employed, it is not clear how important land "loss" is. Economists point to food surpluses and low prices for the producer, and ask why we should worry about keeping agricultural land in production. "Preservationists" argue that land once built on is lost forever to agriculture, that "they aren't making any more of it", that domestic sources of food, particularly specialty crops, should be safeguarded, that a farm is not just a production unit but the cornerstone of a way of life, and so on.

These points are made not to belittle the cause of agricultural land preservation but to provide a brief but necessary background to the attempts which some provinces have made to accomplish it.

Some would argue that special measures to "freeze" the use of a particular category of land are really the antithesis of land use *planning*; be that as it may, no account of land use planning in Canada can ignore them.

Provincial Agricultural Land Protection Measures

The first action by a provincial government to protect agricultural land was taken in response to the rapid conversion of agricultural land to other uses in British Columbia's two principal agricultural regions. Both the lower Fraser Valley with its general farming and dairying and the Okanagan Valley with its orchards and vineyards are relatively small in extent, and in both areas the agricultural lands were under intense pressure from suburban expansion.

The government's response in 1972 was the imposition of a freeze on the development of agricultural land, followed by the establishment of a Land Commission (later the Agricultural Land Commission) with the legal power to establish Agricultural Land Reserves (ALRs) according to criteria set out in the legislation. Land in an ALR cannot, in general, be subdivided or used for non-agricultural purposes; but it can be removed from the

ALR either by the Commission or on appeal to the Environment and Land Use Committee of Cabinet.

Quite similar action was taken by the Province of Quebec, where a very limited area of high-quality (classes I and II and some class III) land is likewise subject to strong conversion pressures. In 1978 the provincial legislature enacted an Agricultural Zoning Act which prohibits non-agricultural use of land designated as farmland under the Act, which is administered by an Agricultural Land Protection Commission.

In Quebec, however, affected municipalities are consulted and hearings held before land is designated, and in general sufficient land has been excluded to allow ample scope for urban expansion. Also, fiscal measures have been employed both to sweeten the pill of designation for farmers, and to make a change in designation less attractive. Hence, the measure has been less controversial in Quebec than it was in British Columbia.

Although these are the only provinces to impose an outright freeze, others have adopted special measures to protect agricultural land.

Prince Edward Island, for example, controls non-resident land ownership, and has set up a Land Development Corporation to purchase land on the open market as part of its Comprehensive Development Plan, and either resell it for farming or ensure that it is reserved for pasture, forestry, wildlife habitat, or recreational purposes. However, activities of the LDC have been considerably reduced in the past decade.

Ontario has adopted "Food Land Guidelines" which the government employs in approving municipal land use plans and subdivision applications; for example, it substantially reduced the area of fruit-growing land which the Regional Municipality of Niagara wished to designate for urban development in its official plan. The guidelines are currently being converted into a formal policy statement with which municipalities will be required to comply under the Planning Act.

The Agricultural Land Protection Issue

Whatever one's views as to the desirability of protecting Canada's agricultural land resource, it is dangerously simplistic to believe that the matter can be dealt with just by erecting some kind of legal Berlin Wall around it. The issue of agricultural zoning, whether at the provincial or the local level, is in fact extremely complex and raises a number of difficult questions.

For example, is it practical (setting aside the question of equity) to require that land be used only for agriculture even where agriculture is no longer profitable?

But where there is no market for the land for other purposes, what is the alternative?

Where, on the other hand, the land's market value for building is far greater than for farming, is it realistic in political terms (again setting aside the question of equity) to believe that it can be retained indefinitely in agriculture? (The evidence strongly suggests that the answer is negative.)

What about the argument that in economic terms it would make more sense to invest in improving the productivity of poorer land than to keep high-quality land on the urban fringe out of the urban real estate market?

What about the "urban shadow" effect on land values and on the economics of farming, usually ignored in the debate but arguably a more serious real threat to agriculture than actual physical urban expansion?

Only a few clear conclusions emerge from the welter of argument and experience over the agricultural land issue:

- Whatever the merits of agricultural zoning as a means of conserving the resource, it is unquestionably important as a means of helping to ensure that urban expansion is orderly, economical, and properly planned and serviced.
- The effectiveness of legal controls on agricultural land is greatly enhanced by fiscal measures.

  In Britain, for example, land designated in municipal land use plans as agricultural is assessed accordingly for taxation purposes, so the owner has no financial incentive to seek rezoning before the land is actually "ripe for development" under the municipal plan. (The potential of fiscal policy as a tool of land use planning in Canada, stressed by Thomas Adams in 1917, deserves far more attention than it has received since.)
- The agricultural land issue can be finally settled, if at all, only in the context of a comprehensive land use/conservation policy which adequately addresses the fundamental social, economic and environmental questions involved.

4.4 Special Cases

Land use planning is not always carried out within a standardised statutory and administrative framework such as municipal planning enabling legislation or Crown land management procedures.

Now and again, particular circumstances call for a special project outside the normal institutional system, and sometimes requiring special legislation. In fact there has been a quite a large number of such cases in Canada in the past 40 years or so, from Newfoundland's outport resettlement program to the St. Lawrence Seaway to the Columbia River Project and Alcan's Kitimat new town in British Columbia.

Because each such operation is undertaken for particular reasons and with specific objectives, the study of their social, economic and/or environmental aims and implications is often of special interest. Three examples have been chosen for a brief look in this paper: the Mactaquac Regional Development Plan, the Haldimand-Norfolk Study, and the Niagara Escarpment Plan.

The Mactaquac Regional Development Plan

The particular importance of Mactaquac lies in its linking of land use planning to economic development; it was, in a sense, an example of trying to achieve sustainable development even before the term had been coined.

The genesis of the Mactaquac Regional Development Plan (MRDP) was the 1964 decision to construct a hydro dam on the Saint John River some 25 km upstream from Fredericton, N.B. [ref. 33]. The new lake created above the dam, 90 km long and on average a kilometre wide, would require the relocation of 300 families, the CNR line, the Trans-Canada Highway, and various other roads, bridges and other facilities. The dam itself would create a barrier to salmon migration.

Much to the credit of those concerned (and to the Resources for Tomorrow conference a few years earlier), the need to solve these and other problems was seen as an opportunity to assist an impoverished region. Much of the land of the upper Saint John valley was too poor to support the smallholding settlements established by the Loyalists who arrived there in the 18th century; by the middle of the 20th, a good deal of it had been abandoned or was absentee-owned. The rest supported a population whose per capita income was less than half the Canadian average.

Under the sponsorship of the federal Agricultural Rehabilitation and Development Administration (ARDA), a federal-provincial study of the region was initiated. The New Brunswick government set up a Community Improvement Corporation as the vehicle for implementing the resultant plan, again with substantial financial support from the federal government.

The MRDP provided for, among other things, the regrouping of displaced families, businesses, institutions and industries in the new town of Nackawick (planned by CMHC), and a new provincial park associated with a

major tourist attraction, King's Landing, which was created by assembling historic buildings from the flooded lands. The MRDP also provided for the necessary relocation of roads, railway lines and other structures and physical facilities.

What is particularly significant, though, is that these physical improvements were used as instruments for the social and economic betterment of the region and were deliberately linked to economic development programs.

One of the most important of these programs was intended to overcome the impediments to a well-managed and productive use of the forest resource which had been created by fragmented and absentee ownership of the forest lands. It included the provision of pool facilities for the use of small forest operators, and encouraging the construction of a pulp mill. Both found their places within the land use plan, subject to environmental safeguards, and in turn contributed to the economic stability of the new town.

The Haldimand-Norfolk Study

The Haldimand-Norfolk Study (HNS) was also a response to the advent of a major development project in a rural area, in this case the 1969 decision of the Steel Company of Canada (Stelco) to build a large steel-making plant on the shore of Lake Erie southwest of Hamilton, Ontario. A new coal-fired Ontario Hydro generating station was already under construction nearby; an oil refinery was to follow.

All this was taking place in a rather placid corner of rural southern Ontario which had hitherto been largely bypassed by industrial and urban growth. The county of Haldimand was an old-established farming area originally settled by United Empire Loyalists; the county of Norfolk to the west prospered greatly on tobacco-growing. The village of Port Dover, almost on the county line, was the base of a substantial fishing industry.

The HNS, a small special project group set up by the Minister of Municipal Affairs, quickly identified two basic problems: how to accommodate a massive (relative to the existing population) influx of steelworkers and their families (employment in the other two industrial plants was modest), and how to deal with the environmental effects both of the industrial operations themselves and of rapid population growth.

The potential environmental hazards appeared to be substantial. Atmospheric emissions from all three plants could endanger both human health and crops; the return to the shallow lake of heated water and sewage effluent might harm the fishery; historic villages, environmentally significant areas (including woodland containing tree species unique in Canada), and picturesque creek valleys could be threatened by uncontrolled urbanisation, which could also undermine the viability of farming by pushing up land values.

The immediate environmental effects of industrial operations were addressed by a joint technical committee set up by the provincial government and the industries; the role of the HNS was to examine the broader interaction among industry, settlement and environment.

For this purpose the Study Director commissioned a comprehensive "environmental appraisal" of an area of 5,000 square kilometres centred on the Stelco site. Its two volumes [ref. 26] dealt with settlement history, geology and geomorphology, atmosphere and climatology, historical ecology, water resources and water quality, soils, forest and agricultural land use, fisheries, wildlife, and landscape quality.

The Haldimand-Norfolk Environmental Appraisal was probably the most complete investigation of its kind ever carried out in Canada up to that time as the basis for land use planning, and to a very considerable extent it determined the recommendations made by the HNS with regard to the location of future urban and industrial development, agricultural land use, conservation, and protection of historic, scenic and recreational resources [ref. 34].

Subsequent events were something of an anticlimax, since the expected massive growth never occurred. Nevertheless, the Environmental Appraisal and the land use planning recommendations were used as guides both by provincial ministries such as Natural Resources, Environment, Agriculture and Food, and Transportation, and by the new Regional Municipality of Haldimand-Norfolk (another outcome of the HNS) in preparing its official plan.

The Niagara Escarpment Plan

No single dramatic event like the advent of a dam or a steel mill brought about the Niagara Escarpment Plan. It arose, rather, from a steady build-up of multiple land use conflicts. Given the nature and location of the Escarpment, such conflicts were (and remain) inevitable. In Cullingworth's words:

> The very features which make the Niagara Escarpment a unique part of the heritage of Ontario also make it a planning nightmare. It is a unique natural landscape stretching some 450 miles [700 km] from the Queenston Heights on the Niagara River to Tobermory at the northernmost tip of the Bruce Peninsula. ... It is at one and the same time a treasure to be preserved and yet a resource to be exploited. Preservation versus exploitation sums up the planning dilemma of the Escarpment. [Ref. 3, p. 313]

The Escarpment has enormous scenic, scientific and recreational value, embracing among other things the Bruce hiking trail, a wealth of flora and fauna, among them rare and endangered species, and probably the most dramatic scenery in southern Ontario. It also supports both orchards and vineyards, and mineral aggregate extraction. And it skirts the western edge of the

Golden Horseshoe, offering tempting opportunities to developers.

As Cullingworth says, "There is no way of reconciling the varying claims on this land. If ever there was a setting for the politics of compromise this is it" [ref. 3, p. 314].

The tortuous sequence of events that finally led to the Niagara Escarpment Plan began when increasing public concern over erosion of the Escarpment's scenic and recreational qualities led the Ontario government to initiate a comprehensive study in 1967. The study report [ref. 42] led in turn to the creation of a task force of government officials to advise the government as to how its recommendations might be carried out [ref. 43].

The outcome was a special statute, the Niagara Escarpment Planning and Development Act, passed in 1973. This established a Niagara Escarpment Commission, responsible for preparing a comprehensive land use plan for the Escarpment.

The Commission's draft plan was published in 1979. More than two years of public hearings followed as required by the Act. These were often acrimonious and clearly illuminated the conflicting interests and values of hikers, gravel pit operators, botanists, landowners and a host of others, including municipal councils. The Commission submitted its revised plan in 1983. After still further hearings and controversy the Niagara Escarpment Plan finally received Cabinet approval and came into force in 1984, 17 years after the process began.

Inevitably, opinions about the plan range from the conviction that it is quite inadequate to protect an irreplaceable provincial asset to the equally firm belief that it is an intolerable intrusion on private property rights.

One of its most controversial features, made uniquely possible by the Escarpment Act, is the means whereby the plan, which takes precedence over municipal land use plans, is applied to privately owned land.

Instead of the traditional zoning, the legislation permits and the plan employs a procedure whereby each proposal to develop or change the use of land within the planning area is individually assessed, approved, approved with modifications or rejected, in relation to the policies set out in the plan. Decisions are subject to appeal to a panel which reports to the Minister of Municipal Affairs.

This system is viewed by some as providing a degree of flexibility and discretionary judgment that is essential in the Escarpment situation, and by others as permitting the exercise of unacceptably arbitrary authority by bureaucrats.

The Niagara Escarpment Plan is a classic example, perhaps indeed a unique example, of the deliberate use of land use planning specifically and almost exclusively to protect environmental values and to conserve non-economic values in the face of a variety of economic and other pressures. While the story of the long struggle to put the Escarpment Plan in place illustrates very clearly the problems which a plan of this nature entails, it also shows that patience, persistence and political will can overcome them.

On the other hand, the Escarpment Plan experience is an object lesson in the difficulties of balancing "private rights" against the "public interest". Some would certainly maintain that the latter suffered as a result of an excessively complex and time-consuming process pursued in the name of the former. It is even asserted that in purely monetary terms it would have cost the provincial government less to acquire the entire Escarpment at market value in 1967 than it did to follow the course it adopted, and would have had far more satisfactory results.

Conclusion

In each of the three cases that have been described, a particular set of circumstances prevailed and a particular and pressing set of problems had to be addressed. In each case these circumstances and problems called for special planning arrangements tailor-made to address them, not pulled off the rack of the standard administrative system. In each case these special arrangements made possible accomplishments which almost certainly would have been impossible without them. Much the same is true of the Saint John River Basin Study, the Fraser River Estuary Management Program, and the New Jersey Pinelands Commission, all described later in this paper, as well as of a substantial number of other cases in Canada. It is a fair conclusion that the greatest potential for effective and successful land use planning occurs where a specially constituted agency has overall planning responsibility for a particular area, including the responsibility and the ability to coordinate the efforts of different agencies at all levels of government — but not necessarily with special legal powers.

It would be unrealistic to envisage this approach becoming the standard means of land use planning throughout the country. It often calls for special legislation, and always for special funding, effective leadership, and a general willingness — and ability — to work together towards common ends. It undoubtedly puts an extra load on often overburdened public servants. Very often there is no justification for any extraordinary measures. On the other hand, the special-area, special-agency device could be put to good use, if selectively, certainly more widely than it has been.

4.5 Land Use Planning North of 60

Until the '70s, almost all the land in the Northwest Territories and Yukon was Crown-owned and was managed, by means of a system of land use permits, licences and leases, by one department of the federal government, Indian Affairs and Northern Development (DIAND).

While this remains broadly true, other federal departments, especially Environment and Fisheries and Oceans, are now regularly involved in decision-making. Control over most renewable resources has been devolved to the territorial governments, and the same is to apply to onshore oil and gas development. The disposition and use of water is controlled by territorial water boards.

Negotiations over aboriginal land claims have led to one settlement, which gives the Inuvialuit of the western Arctic title to substantial tracts of land as well as important rights with regard to land, resources and environmental protection. Agreements in principle with the Council for Yukon Indians and with the Dene and Métis of the Mackenzie Valley were signed in 1988.

The Northern Land Use Planning Policy

By the mid '70s, the need for an effective system of land use planning in the territories was apparent [ref. 41]. By the end of the decade DIAND became convinced that action must be taken. The factors which led to this conviction included the Berger report [ref. 16], oil exploration in the Beaufort Sea, the reports of environmental assessment panels and of various special studies, and the prospect of a new land régime arising from further devolution of authority to the territorial governments and from claim settlements. The federal Cabinet approved a Northern Land Use Planning (NLUP) Policy in 1981.

The initial proposal was essentially for a centralised system of bureaucratic decision-making offering only a minor role to the territorial governments and the aboriginal peoples. In the N.W.T. this scheme was greatly modified in subsequent negotiations, and in 1983 DIAND accepted a land use planning system built around a territorial Land Use Planning Commission comprising a nominee of each of the four aboriginal organisations and two federal and two territorial government nominees. The 1983 agreement also contains several provisions intended to ensure that land use planning will be carried out with the full participation of northerners, specifically native northerners, and will give priority to their interests [ref. 32].

Once the actual land use planning program got under way, in the Lancaster Sound and Beaufort Sea-Mackenzie Delta regions, it was largely taken over by regional "sub-commissions" consisting mainly of Inuit in the former case and Inuvialuit and Dene in the latter: a striking departure from the Ottawa-based, bureaucrat-dominated scheme originally proposed. The Yellowknife-based N.W.T. Land Use Planning Commission has now been abolished in favour of three regional commissions based on land claim areas. In the Yukon, where no agreement was reached until 1987, the new system was regional from the first.

Conservation Strategies and Sustainable Development

While the NLUP Policy was being conceived, promulgated, negotiated and finally put into effect, a separate but related process was simultaneously taking place. Government departments, scientific and academic bodies and others have made literally scores of proposals dealing with some aspect of conservation in the north; but the idea of a comprehensive northern conservation *strategy* was born of the *World Conservation Strategy* published in 1980 by the International Union for the Conservation of Nature [ref. 35].

In 1983 the Minister of IAND appointed a Northern Conservation Task Force which in the following year made two key recommendations:

> the establishment of an integrated resource management process for land, fresh water and marine areas based upon the deliberate integration of various uses and values,

and the immediate establishment of

> a comprehensive network of protected areas ... according to a predetermined set of criteria [ref. 51, p. 38].

Both recommendations are currently being pursued. The two territorial governments have initiated the development of conservation strategies for their respective jurisdictions, while the Department of Fisheries and Oceans is preparing an Arctic Marine Conservation Strategy. Work is proceeding under federal-territorial aegis towards the identification of the protected area network. In addition, the Inuit Circumpolar Conference, representing the Inuit of Canada, Alaska and Greenland, is developing an Inuit Regional Conservation Strategy.

Sustainable development is the keynote of the northern conservation strategy program. If the term is new to northern Canada, the idea is not. Despite drilling rigs, pipelines and ubiquitous seismic cutlines, the traditional renewable-resource-based or "domestic" economy of the aboriginal peoples is still very much alive.

For many northerners hunting, fishing and trapping are not just a means of livelihood but a way of life. For the aboriginal peoples the land is not just the place where they happen to live, or a source of income, and certainly not a market commodity. It is intimately bound up with their histories, cultures, beliefs, and indeed their continuing identity as distinct societies: it is part of their sense of themselves.

It follows that "land use", "making a living", and "way of life", quite different ideas to most southerners, to many northerners mean virtually the same thing.

Nevertheless, the northern aboriginal peoples do not wish to be denied the benefits of participation in the market-oriented enterprises which seek to exploit the non-renewable resources of their homeland; thus "sustainable development" sums up the central cultural, economic and environmental issue of the north.

The Lancaster Sound Regional Land Use Plan

This is the background to the first of the plans being prepared under the NLUP Policy, the Lancaster Sound Regional Land Use Plan. (The other, still at the discussion paper stage, is for the Mackenzie Delta-Beaufort Sea region.)

Lancaster Sound itself is actually a strait separating Baffin and Devon Islands. The planning region includes all the lands used by the communities of Clyde River, Pond Inlet, Nanisivik, Arctic Bay, Resolute Bay and Grise Fiord, a total of 1.5 million square kilometres. The region is a paradigm of northern land use issues. An area of great natural beauty, the coasts and waters of the Sound are rich in wildlife, particularly birds and marine mammals, and are thus of great importance both to Inuit hunters and to biologists. But both oil production and mining are already under way in the region, and the Sound itself is part of the Northwest Passage and the tanker route south from Arctic oil and gas fields.

A federal environmental assessment panel pointed out in 1979 that in these circumstances individual development proposals could not adequately be evaluated in isolation [ref. 38], and a subsequent DIAND study of the Sound region [ref. 21] laid the groundwork for land use planning. ("Land" is taken in the north to include the sea and sea ice, an extension of the land as far as the Inuit are concerned, though not to tanker and Coast Guard captains: one of the unique features of land use planning in the north.)

The Lancaster Sound Regional Land Use Planning Commission published its first draft plan at the end of 1987 and the second draft in September 1988 [ref. 39]. The observations which follow relate to the second draft.

As might be expected, this is rather different from the typical southern land use plan. For one thing, it is not confined to "land use" in the sense that can be depicted by a patchwork of colours on a map; it is as much concerned with how and on what terms activities are carried out as where.

For example, one of the objectives of the plan is to "Maximize benefits [of mining developments] to the communities by ensuring that they are prepared to take advantage of economic opportunities offered by exploration and production." Another is that "... renewable and non-renewable resource development projects in the Region should proceed in phases in accordance with strict environmental controls [and] maximum regional benefits...."

But, unsurprisingly in the circumstances that have been described, the most prominent feature of the plan is that conservation, particularly but not exclusively renewable resource conservation, is its primary goal. The plan states explicitly that "Conservation, or the wise use of all resources, both renewable and non-renewable, is the central principle of this plan because it is essential to the future of the region." The first principle relating to "renewable resource land use" is: "All land uses will be conducted in such a way as to protect the opportunities for domestic harvesting."

These objectives are to be achieved, according to the plan, through improved communication between land users and the communities. With the help of the latter, the renewable resource values of the land have been identified and form part of the land use plan. They are reflected in an "Areas of Importance" map which delineates the principal areas of use both by the communities and by wildlife. This is the first step in seeking to relocate prospective development to a less sensitive area or time, where appropriate. The information may also influence the terms and conditions which are attached to all land use permits.

But the plan accepts non-renewable resource industry and other non-traditional economic activities provided they adhere to its principles and objectives. Hence it could as well be called a plan for sustainable development as a land use plan.

The Lancaster Sound Regional Land Use Plan still has a long way to go before it receives the approval of the federal Cabinet and the territorial Executive Council, and it is too soon to know what its final form will be. Many questions remain about just how it will be implemented and how effective, in practice, it will be in shaping the future development of the region.

Nevertheless, for the first time a serious attempt has been made to weave the hitherto separate strands of land use, economic development, and conservation into a single fabric. Whatever failings the Lancaster Sound land use plan may have, and whatever measure of success it may achieve, the model for land use planning throughout Canada is an extremely important one. Through the aboriginal perception that draws no sharp distinction between land, the natural environment, and living things, or between land use, economy, and way of life, the Lancaster Sound Commission has used a "land use planning" system to translate the rather amorphous concept of sustainable development into concrete and coherent terms.

4.6 Water Management and Water-Related Planning

Along its course a river may generate electricity, carry logs to mills, provide recreation, irrigate farms, supply towns and industries with water, float water traffic, support a commercial fishery, and provide Indian communities with their livelihood — among other things. It may, and quite probably does, receive industrial wastes, municipal sewage and pesticide-contaminated farm runoff.

If it flows through a province (or provinces), the river comes under provincial jurisdiction for most purposes, but navigation and fisheries are under federal control; the same legal authority does not apply to its waters as to its bed; its foreshore may be subject to provincial control, or municipal, or to that of a harbour commission or some other special authority. It may even involve international jurisdiction.

In these circumstances, the planning and management of onshore land use, of water use, and of water quality, all of which are inextricably intertwined, can be a matter of extraordinary complexity, particularly when nature conservation becomes a goal and environmental management part of the total set of planning and management arrangements.

Water Management in the Provinces

At the provincial level, arrangements for water management vary considerably across the country. Typically, water quality is the concern of one provincial department and use allocation, in some cases by means of a licensing system, the responsibility of another, while land use is dealt with by a municipality or by the department which administers Crown land, according to circumstances. In other words, water is treated essentially as a resource to be safeguarded and made use of, but otherwise unrelated to the use of abutting land.

The principal exceptions are Alberta, Saskatchewan and Ontario. The two western provinces have both adopted the approach of comprehensive planning for water management by individual river basins and with public involvement. In Alberta the provincial government carries out the program directly; in Saskatchewan a provincial Water Corporation is responsible for it.

In Ontario, intermunicipal conservation authorities, with financial support from the provincial government, have a statutory mandate for conservation and water management within watersheds. Their powers over water are constrained by the authority of provincial ministries, and arguably they do not make full use of their general conservation mandate. However, the creation of an extensive system of water-oriented recreation areas for the five million city-dwellers of southern Ontario furnishes a commendable example of effective planning for multiple use.

Joint River Basin Planning

Depending on the geographical circumstances, and assuming some intergovernmental cooperation where necessary, river basin planning exclusively under the authority of a provincial government may be able to produce satisfactory results. Due to the jurisdictional complexities noted above, however, in other cases coherent planning can only be carried out through the joint participation of the provincial and federal governments and perhaps other public agencies.

This state of affairs is the basis of "Strategy 3: Integrated Planning" in the new Federal Water Policy [ref. 19, p. 10]. This strategy statement is worth quoting at some length because it defines both the planning problem and the federal government's current approach to dealing with it in cooperation with the provinces:

> The federal government endorses an integrated approach to the planning and development of water resources [which] takes into account all water uses and water-related activities, within whatever political, administrative, economic or functional boundaries they are defined. Increasingly, watersheds are becoming the preferred spatial unit for water resource planning. It is an approach that makes sense at any scale of planning, whether governmental or private, but for the major river basins, integrated water resource planning is practically synonymous with joint federal-provincial-territorial planning. The interdependence and growing competition among water users, and the recognition of recreational, social, environmental and heritage values are additional reasons for the increasing importance of co-operative planning between the various levels of government agencies and institutions.

Although the policy statement is new, the actual policy of undertaking joint river basin studies is not. Since the passage of the Canada Water Act in 1970 some dozen such projects have been carried out across Canada. While perhaps none can be described as "typical", a brief account of one of the earliest, the Saint John River Basin Study, will serve to illustrate the nature of these projects [ref. 53].

The Saint John River Basin is one of North America's oldest areas of European settlement. By 1951 the New Brunswick portion of a basin that included parts of Quebec and Maine had a population of nearly a quarter of a million, with the City of Saint John the largest urban area and the only important manufacturing centre. Otherwise, the economy of the region was dominated by agriculture and forestry, together with coal mining. There was also a commercial fishery in the river's estuary.

The next 20 years brought a substantial increase in population and a greater increase in urbanisation, as well as the expansion and mechanisation of the forest industries, with more use of pesticides. Changes in agricultural practices during the same period included greatly increased use of pesticides and chemical fertil-

isers and led to increased run-off from animal wastes and to increased soil erosion, all contributing to a serious deterioration in water quality. Dams, including Mactaquac (see 4.4 above), were built to supply hydro-electric power.

The Saint John River Basin Board, consisting of three federal and three provincial members, was established by the federal and New Brunswick governments in 1970 specifically to carry out a study of the Basin. The study, which included an extensive program of public participation, took four years at a cost of $1.6 million.

Since no formal implementation program was signed it is not possible to credit subsequent actions to the study with complete certainty; however, many of its 115 recommendations were in fact carried out, relating, for example, to reduction of industrial pollution, sewage treatment, flood damage reduction and regulation of watercourse alterations. The study also increased public awareness of water management and encouraged improved communication among government agencies.

In retrospect the Saint John study could be criticised for failing to take a truly synoptic approach and for producing 115 discrete recommendations rather than a *plan* for the Basin, though the problems which would be faced by an ad hoc, temporary, joint federal-provincial body in advancing anything like a comprehensive land use plan are obvious.

Recognition of the need to take an entire river basin, or at least a large portion of it, as the subject of study was an important step forward at the time, and later a more systematic approach to planning was adopted. In 1976 the major steps in the planning process were summarised thus [ref. 20, p. 10]:

- define multiple goals and objectives,
- assess resource capability,
- determine future demands,
- compare resource capability with future demands and formulate alternatives,
- evaluate alternatives,
- recommend a plan.

(Another example of joint river planning, the Fraser River Estuary Management Program, is described in 4.10 below.)

The Great Lakes

Even compared with the technical and jurisdictional complexities of several Canadian river basins, the Great Lakes Basin is a special case, not only because of the magnitude and complexity of the pollution problem and the extent and variety of contributory land uses but because of the number of jurisdictions involved, including two sovereign states. There is at least a single, permanent public agency to provide a focal point for research, studies and recommendations, but the International Joint Commission's functions are closely circumscribed by treaty and certainly do not extend to regulation or to the preparation of a land use plan for the basin.

Nevertheless, it is in relation to the Great Lakes that the need for ecosystem-based planning has been most clearly identified and most vigorously advanced. The *Great Lakes Atlas and Resource Book* [ref. 18], co-sponsored by the responsible agencies of the Canadian and U.S. governments, uses the word "management" rather than "planning", but planning is inherent in the approach described. Again, it is worth quoting at some length (p. 40):

> The adoption of an ecosystem approach to management is the result of growing understanding of the many interrelated factors that govern the ecological health of the Great Lakes. An ecosystem approach does not depend on any one program or course of action. Rather it assumes a more comprehensive and interdisciplinary attitude that leads to wide interpretation of its practical meaning. Certain basic characteristics, however, mark the ecosystem approach.
>
> First, it takes a broad, systemic view of the interaction among physical chemical and biological components in the Great Lakes basin. ... Second, the ecosystem approach is geographically comprehensive, covering the entire system including land, air and water. ...
>
> Finally, the ecosystem approach includes humans as a central factor in the wellbeing of the system. This suggests recognition of social, economic, technical and political variables that affect how humans use natural resources. Human culture, changing lifestyles and attitudes must be considered in an ecosystem approach because of their effects on the integrity of the ecosystem.
>
> The ecosystem approach is a departure from an earlier focus on localized pollution, management of separate components of the ecosystem in isolation, and planning that neglects the profound influences of land use on water quality. It is a framework for decision making that compels managers and planners to cooperate in devising integrated strategies of research and action to protect the integrity of the Great Lakes ecosystem for the future.

In practice these "integrated strategies of research and action" are currently taking the form of "Remedial Action Plans" for particular Great Lakes "hot spots". The Hamilton Harbour RAP, as an example, involves four levels of government (local, regional, provincial and federal) and the cooperative efforts of specialists in fields ranging from aquatic and wildlife biology to engineering and landscape architecture.

Comment

What emerges from this rapid and selective survey is a rather fundamental dilemma. On the one hand it is being perceived with growing clarity that a river or lake system,

its waters, the living things they support, the lands beside them, the living things the land supports and the ways in which the land is used — all these, including human communities, comprise a *system*, with all the complex interrelatedness the word implies.

On the other hand, the political administration, use, management, ownership — and exploitation and abuse — of that system form an extraordinary jigsaw puzzle bearing no relationship to the form of the system itself. Federal-provincial agreements, watershed management, conservation areas, and recognition of the need for ecosystem-based planning are all important steps, but clearly there is a long reach still to be travelled.

4.7 Planned Land Use Without Land Use Planning: Regional Economic Development

The Agricultural Rehabilitation and Development Act (ARDA) of 1961, the lineal descendant of the Prairie Farm Rehabilitation Act of 1935, was the first in a succession of postwar federal regional economic development programs which continues to the present day. Both PFRA and ARDA can be regarded as precursors of sustainable development, inasmuch as they combined economic development and conservation objectives.

Since 1961, specific objectives, organisation, and modus operandi of the federal programs have changed from time to time in response to changing economic and political circumstances. ARDA, for example, was intended to assist marginal agriculture throughout Canada (and later, through the Fund for Rural Economic Development, to provide broader help to poor rural areas). The program which followed it, the Atlantic Development Board (ADB), by contrast, was intended to encourage economic growth generally in a particular region of the country.

Following the creation of the Department of Regional Economic Expansion (DREE) in 1969, this "twin-track" approach gradually resolved into a policy which combined a focus on particular areas through agreements with the provincial and territorial governments (the Prince Edward Island Development Plan, General Development Agreements, later Economic and Regional Development Agreements), with an emphasis on encouraging industrial growth through such measures as building infrastructure, creating industrial parks, and providing direct financial assistance and incentives. This policy is most clearly illustrated by the Industrial and Regional Development Program introduced in 1983, which provided assistance to industrial development in different parts of the country according to which of three qualifying "tiers" they fell into.

Current government policy appears to favour the regional over the sectoral "track" by leaving spending decisions to individual regional agencies [ref. 10].

The programs of DREE and its successor, the Department of Regional Industrial Expansion (DRIE) (the reorganisation and name change in 1984 represented a real change of emphasis), are not the only federal activities to favour particular areas of the country. Federal transfer payments both to provinces and to individuals, federal government procurement, and the Department of Employment and Immigration's Industrial and Labour Adjustment Program, among others, have the effect of benefiting some regions more than others or can be used to do so.

Regional Development and Land Use

Clearly, any government program which encourages growth in a particular geographic area or in a particular economic sector affects the use of land; but in some instances land use itself has been either the object or the vehicle of the program.

Improvement of marginal farmland, farm consolidation and better land management practices under ARDA provide one case in point. Another was the Atlantic Development Board's spending on infrastructure (roads, water supply, sewerage) and industrial parks to foster industrial growth, a technique also used under the P.E.I. Development Plan and later DREE and DRIE programs. DREE's policy expressly employed the "growth pole" principle whereby investment was concentrated on specific cities, a policy with obvious land use and environmental implications.

Yet these implications have seldom been explicitly acknowledged. There are probably several reasons for this, one of them being that the federal government could not be seen as intervening in land use planning, considered to be an area of provincial jurisdiction. Be that as it may, regional development remained largely the preserve of economists, in effect the planning of land use without land use planning.

It seems possible that this failure to recognise the spatial or physical dimension of regional development may have led to the worst of both worlds: in 1987 the Federal-Provincial Task Force on Regional Development Assessment commented that "The role of urban growth in regional development has been neglected given the dynamic role which urban centres play in employment creation and service sector growth" [ref. 31, p. 13].

The Task Force also draws attention to the importance of a physically and socially attractive environment in encouraging growth in present economic conditions. In effect, its report argues for a much broader approach to economic development, referring explicitly to Winnipeg's Core Area Initiative, in which measures to encourage economic growth are linked to social programs and environmental improvement.

Such an approach to regional development was once taken in Ontario. The 1966 White Paper *Design for*

Development which announced the province's regional development program explicitly brought economic development and land use together as aspects of regional policy:

> It is ... this government's role to ensure that regional land use planning is undertaken so that the regions of the province are developed according to an orderly plan which would include environmental and economic considerations. [Ref. 44, p. 5]

In practice, however, the program concerned itself mainly with reducing interregional economic disparities, again adopting the "growth pole" approach but giving little attention to land use per se until the publication of the Toronto-Centred Region (TCR) "concept" in 1970. This incorporated some regional economic development objectives, but the economic development and land use (TCR) aspects of the Design for Development program were never fully integrated, and the program as a whole died in the mid '70s.

Nevertheless, the principles and objectives outlined in the 1966 White Paper remain a far-sighted vision of regional development in the broadest sense.

4.8 Land Use Planning Without a Land Use Plan: Environmental Impact Assessment

The practice of examining the probable effects of a proposed use of land before authorising it is far from new. For example, since 1947 municipalities in Britain have been able to scrutinise any substantial development or change of land use before granting "planning permission", and to refuse permission or attach appropriate conditions in the interest of, for example, water or air quality, daylighting, or protecting a valued natural or historic feature.

But environmental impact assessment (EIA) as a distinct formal procedure is usually considered to have originated in the U.S. National Environmental Policy Act of 1969, which, broadly speaking, required construction projects and other development schemes carried out under federal government auspices to be subjected to EIA.

Four years later the idea was borrowed by the Canadian government, which set up the Federal Environmental Assessment Review Office (FEARO) under the Minister of the Environment to administer the Environmental Assessment and Review Process (EARP) for much the same purpose. EARP, though, is at present purely an administrative procedure not specifically provided for by statute.

Subsequently, the provinces initiated their own EIA procedures, though these vary greatly in effectiveness and some are barely more than nominal. An environmental review procedure was also introduced into the federal land management process in the two northern territories.

The basic idea of EIA is quite straightforward: to scrutinise a development scheme while it is still in the planning stage (sometimes by examining an "impact statement" prepared by the proponent) in order to ensure that the expected effects on the environment are acceptable and to require such corrective or mitigative measures to be incorporated as seem necessary; or, in extreme cases, to reject the project altogether.

Initially, "environment" meant mainly the natural environment (the original U.S. statute was enacted a few years after the publication of Rachel Carson's *Silent Spring*, on the flood tide of the "environmentalist" movement), but later expanded to include the social, cultural and economic milieu as well. Ontario's Environmental Assessment Act defines "environment" to include, effectively, everything.

Since the basic purpose and process are much the same and most of the legal and procedural differences of little importance for the purposes of this paper, the various EIA régimes in Canada will not be examined in detail. A comparison of some of the main features of the federal, Ontario and Manitoba systems will serve to illustrate some of the principal variations.

The Federal Environmental Assessment and Review Process

As noted, the federal EARP has no statutory base but is an administrative procedure which a minister may, but is not obliged to, require as a precondition of his/her approval or authorisation of a project which is in some way under his/her jurisdiction.

If a project is referred to the Minister of the Environment for EARP, and if initial screening indicates a potential for significant environmental damage, an independent panel is set up, a public review is carried out, and the panel's report and recommendations are publicly submitted to the Minister of the Environment and to the originating minister for such action as they consider appropriate.

Although there are guidelines for the review process, relating to the holding of hearings and other forms of public participation among other matters, the process is flexible and panel hearings are typically fairly informal.

(According to a recent statement by the Minister of the Environment, EARP is to be legislated, EIA will become mandatory for all federal activities, and FEARO will decide on the need for public review, subject to appeal to the Minister.)

The Ontario Environmental Assessment Act

The Ontario Environmental Assessment Act of 1975, by contrast, potentially governs every "undertaking" carried out in the province, though so far it has been applied mainly to provincial and municipal "undertakings". The meaning of "undertaking", furthermore, is not confined to actual development projects but includes plans and programs relating to land use and development. (Whether it is applicable to municipal official plans appears still to be a moot point, but in practice they have not so far been subjected to assessment.)

Given also that "environment" as defined in the Act includes not only the entire physical environment, both natural and man-made, but also — inter alia — "social, economic and cultural conditions", a literal interpretation of the Act would thus exclude very little from its purview.

Another notable feature of the Ontario Act is that the proponent is required to provide not only an assessment of his proposed "undertaking" but also a description of alternatives to it.

An application may be decided by the Minister of the Environment, but any major undertaking is likely to be referred to the Environmental Assessment Board for decision. Unlike an EARP panel, the Board is a permanent body and its proceedings are quasi-judicial in form.

The Manitoba Environment Act

EIA under Manitoba's 1987 Environment Act has features of both of the older processes. The procedures are statutorily defined, and mandatory for any "development" falling within the ambit of the Act. Like Ontario's Environmental Assessment Board, Manitoba's Clean Environment Commission is a permanent body, but it is not a decision-making one; its functions with regard to EIA (it has others) are more like those of an EARP panel.

Both "development" and "environment" are much more narrowly defined than their counterparts in the Ontario statute. On the other hand, unlike both the Ontario Act and the federal process, the Manitoba Act specifies the "developments" which are subject to EIA, classifies them to determine the exact procedure to which they will be subjected, and provides formally for a "screening" stage to reassign a particular proposal if appropriate.

The Act also attempts to ensure the coordination of EIA with Manitoba's land use policy/planning system (see 4.10 below).

EIA and Land Use Planning

Since EIA was introduced into Canada it has been subjected to a steady stream of critical commentary, and a comprehensive review of EARP has recently been completed while a similar review of Ontario's Environmental Assessment Act is currently in progress.

Very little of the criticism has been directed at the basic principle. Much of it has been concerned with alleged technical or procedural deficiencies: for example, the limited value of some environmental impact statements due to the inadequacy of the requirements and guidelines set for them. Examples of this type of critique can be found in Beanlands and Duinker's 1983 study and in the 1986 commentary on the Ontario Act by the Canadian Environmental Law Reform Foundation [refs. 15, 24].

Other problems are not internal to the EIA process but concern such matters as lack of policy context, inability to deal adequately with long-term, indirect, secondary and cumulative consequences, and inability to guarantee long-term monitoring and enforcement.

Weaknesses in this second category are inherent in the nature of EIA, so that not much can be done about them by improving the process; they arise from the fact that EIA is typically (though not invariably) a time- and site-specific response to a particular development proposal, applied separately from any general régime of land use regulation.

These weaknesses could have been largely avoided when EIA was adopted by provincial governments had the procedure been treated, as in some European countries, as an elaboration of the land use planning system. On the one hand this would have given EIA the context and continuity which it now generally lacks, while tending to simplify and expedite the process; on the other, it could have given the implementation of land use plans greater effectiveness combined with greater flexibility.

Yet neither the 1974 Ontario "Green Paper" on environmental assessment nor the legislation which followed — to cite probably the most glaring example — made any acknowledgment of the land use planning régime which had been in effect at the local level for more than 20 years, nor even of the planning program which was being carried out at the time by the provincial government itself. Conversely, the new provincial Planning Act that was passed a few years later largely ignored the existence of the Environmental Assessment Act (though the committee on whose recommendations it was based did make some suggestions regarding the coordination of the two statutes). These anomalies probably owed less to objective analysis of alternative approaches to the regulation of land use than they did to that recurrent obstacle to integrated land use planning in Canada, the fragmentation of areas of jurisdiction both between and within levels of government.

This problem may be overcome in Manitoba, where links are provided by the Provincial Land Use Policies and the Interdepartmental Planning Board; but it is too soon to tell whether this will be adequate to ensure real integration with land use planning, especially at the municipal level.

4.9 More and Less than Land Use Planning: Conservation Strategies

The term "conservation strategy" has been variously defined, but in essence it means identifying and addressing conservation and environmental protection issues in a comprehensive, integrated fashion rather than piecemeal. The use of the word "strategy" implies going beyond general statements about measures needed, to setting out a definite plan of action.

("Conservation strategy" is sometimes treated as almost synonymous with "strategy for sustainable development". However, for the purposes of this discussion the more restricted definition will be used, based both on the term itself and on the actual characteristics of conservation strategies as they are emerging in Canada and elsewhere.)

Following its introduction in 1980 by the publication of the World Conservation Strategy [ref. 35], the conservation strategy idea caught on quickly throughout the world. In many countries national conservation strategies have been adopted or are being prepared. Regrettably, Canada is not one of these, the federal government having decided not to pursue a Canadian national conservation strategy as such (though the Commonwealth Government of Australia, so similar constitutionally and geographically to Canada, has done so).

However, the Government of Prince Edward Island has adopted a conservation strategy for the province [ref. 29], and considerable progress has been made in Alberta, the Yukon, and the N.W.T. towards conservation strategies. In all the remaining provinces at least a start seems to have been made in one form or another. In addition, an Arctic Marine Conservation Strategy is being prepared under the aegis of the federal Department of Fisheries and Oceans.

In such a dynamic situation a more detailed account of the state of affairs across the country would not be very useful, especially as it would probably be out of date by the time it was published.

(A cross-Canada survey of conservation strategies was published by the Canadian Society of Environmental Biologists in July 1987 [ref. 2] and a compendium of Canadian experience [ref. 23] by the Canadian Council of Resource and Environment Ministers in 1988.)

A review of conservation strategy documents from Canadian and foreign sources reveals substantial variations in approach and substance. This is to be expected and is entirely appropriate, since the problems, objectives, priorities, and suitable means of addressing the problems will differ from one area to another. Like land use planning, the conservation strategy idea is not a technical formula or procedure that can be transferred intact from one place to another, but an orientation inspired and guided by a particular goal, leading to a program of action appropriate for a specific set of conditions. The brief account of P.E.I.'s conservation strategy which follows is therefore intended more as an illustration than as a model.

The Prince Edward Island Conservation Strategy

P.E.I.'s conservation strategy was prepared by a committee appointed by the provincial Executive Council, comprising representatives of non-governmental organisations, civil servants and academics. The committee in turn appointed five working groups to study and make recommendations on, respectively, soil degradation and conservation, water and wildlife management, water quality and pollution control, landscape protection, and coastal zone management.

The reports of the working groups were blended by the core committee into a comprehensive set of problem identifications, conclusions, and recommendations, under the headings of:

- agriculture,
- forestry,
- transportation,
- fish and wildlife,
- coastal zone,
- landscape, land use planning and tourism, and
- water management and pollution control.

Recommendations on these subjects covered, among other things:

- legislation,
- new and revised government programs,
- research,
- operational and management practices,
- provincial plans, guidelines, and standards,
- program coordination,
- federal-provincial cooperation,
- land use planning,
- protection of special areas.

But in addition, the strategy deals with education and public awareness, with the role of volunteer organisations, and with the actions required of the government itself in support of the strategy.

Also like a land use plan, a conservation strategy is not self-fulfilling. Adoption or approval of a document like P.E.I.'s Conservation Strategy in itself accomplishes very little; it is primarily a commitment to undertake the actions that have been recommended. Hence the importance of the strategy's proposal that a permanent coordinator, reporting to the Executive Council, should be appointed to keep the process moving.

Conservation Strategies and Land Use Planning

A conservation strategy is not a land use plan, but it will be obvious from the content of the P.E.I. Conservation Strategy that there may be a great deal of overlap in

subject-matter between a land use plan and a conservation strategy.

The latter will not be concerned with land use issues that do not have significant conservation implications. It is likely to deal more in general policies, guidelines, and standards than in lines on a map, and it will embrace activities not directly related to land use at all. But clearly land use is central to a conservation strategy nevertheless; land use planning can do a great deal to support it; and it is critical that where both kinds of program are in effect they should at least be in harmony.

The ideal complementary relationship would see the conservation strategy contributing some of the goals of the land use plan, and the plan serving as one of the instruments both for carrying out the strategy and for reconciling it with other policies and programs such as economic development.

Ultimately, one might hope for a fuller integration in which conservation strategy and land use plan (and EIA) would be merged into a "strategy for sustainable development and land use".

4.10 Getting It Together: Policy and Program Integration

The question is obvious: is no attempt made to unify, or at least to harmonise, all these land-use-related programs?

The answer is yes — to some extent and in some parts of the country, but unevenly and incompletely.

Broadly speaking, three approaches are used:

- adoption of government policies to guide individual programs,
- coordinated administration of programs, and
- area-specific interagency cooperation.

Land Use Policies

The federal and Manitoba land use policies are the outstanding examples of this approach.

The Federal Policy on Land Use (FPLU) [ref. 22], approved by Cabinet in 1980, governs the administration of federal lands and properties and the conduct of federal activities insofar as they affect land use. The goal of the the FPLU is stated as:

> to ensure that federal policies and programs and the management of federal lands contribute to the wise use of Canada's land resources.

This goal is to be pursued in cooperation with the provinces and in support of provincial land use objectives regarded as "operating in the national interest."

Specifically, the FPLU commits the federal government to acquire and manage land with a view not just to the efficient provision of federal services but also to achieving "broader social, economic and environmental objectives."

It also commits the government to ensuring that "all significant land-related projects" with federal involvement are subjected to the Environmental Assessment and Review Process, and to identifying and protecting areas of special national value.

In addition, the FPLU sets out guidelines which require departments and agencies to consider the effects of policies and programs on particular categories of land use. These general guidelines have now been elaborated by detailed "screening" procedures applicable to each category and to particular kinds of government activity.

The FPLU, of course, applies only in respect of areas of direct federal responsibility. Manitoba's Provincial Land Use Policies (PLUPs), referred to earlier in this paper, are not subject to this limitation [ref. 47]. There are 13 policies, dealing with:

- agriculture,
- rural residential development,
- urban expansion,
- recreational use of land,
- protection of particular kinds of area or feature, including water, resource areas including sources of construction material, and environmentally significant areas,
- renewable resource conservation,
- hazard lands,
- development along highways.

By way of illustration, Policy No. 10 reads:

> Areas shall be identified, designated and reserved for renewable resource production, utilization and preservation by outlining: (a) areas of existing prime wildlife habitat; (b) existing exceptional forestry value areas; (c) areas of existing prime fish habitats; (d) other areas of renewable resource significance.

In addition to the policy statement proper, each policy is elaborated by a statement of objectives, guidelines for application, and definition of terms used.

Originally PLUPs were put into effect in 1978 under the province's Planning Act as a guide to the Minister of Municipal Affairs in reviewing municipal and intermunicipal land use plans and as a basis for regulating the use of private lands where no such plans existed. They were adopted by Cabinet in 1980. Thus they now also provide the basis for overall coordination of provincial programs affecting land use, including the management of Crown land and the operations of the various provincial departments as they affect land. The policies are currently being comprehensively reviewed.

Other provinces, including Nova Scotia, New Brunswick, Ontario and Saskatchewan, have made statutory provision for the adoption of provincial policies or land use guidelines. The Ontario government, for example, has recently published a draft policy statement on wetland conservation. While formally the purpose of such statements is to govern municipal plans, as they are "government" policies developed through some form of interdepartmental consultative process, they can be assumed to influence provincial government programs as well.

Program Coordination

Every province has some means of coordinating government decision-making relating to land use, usually either a Cabinet committee or a committee of senior civil servants.

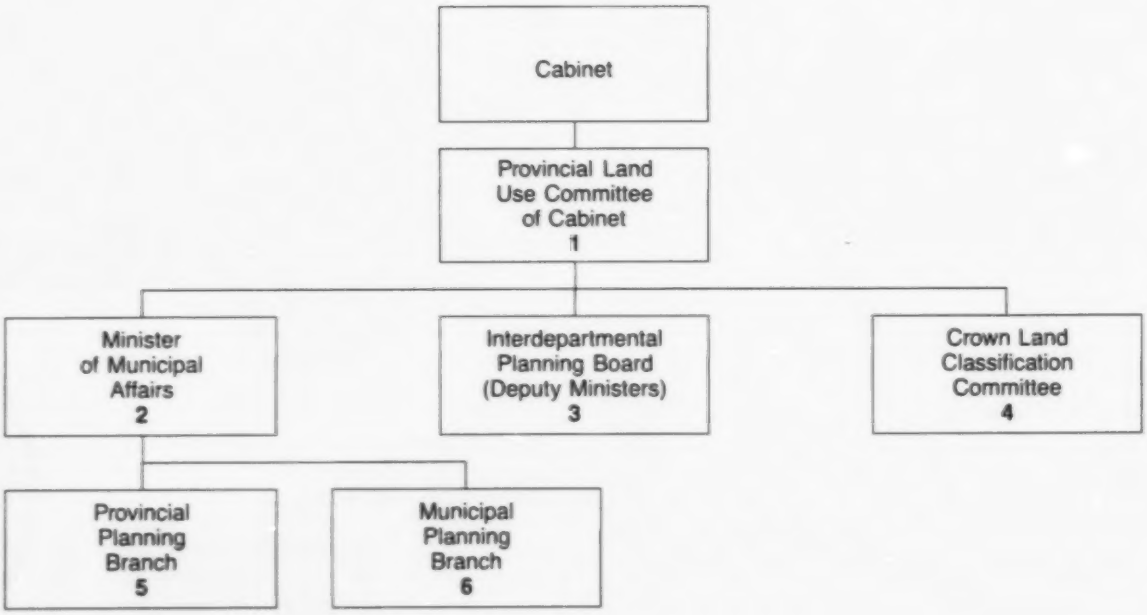
In the northern territories, where most land-related responsibilities are still held by the federal Department of Indian Affairs and Northern Development, there is a system of committees and consultation involving other federal departments, the territorial governments, and the aboriginal communities.

In general, however, the functions of these bodies and procedures fall far short of the comprehensive planning of land use or the development of Manitoba-style general policies to govern the activities of different agencies. Instead, they tend to focus on specific issues and ad hoc coordination of departmental operations.

The elaborate structure of Alberta's Integrated Resource Planning System, already described, is a partial exception, but this applies only to designated areas of public land. This is also true in Newfoundland, which has adopted an interdepartmental system of Crown land management similar to Alberta's, though rather less elaborate.

The only provinces to have established really comprehensive, province-wide, integrated systems of land use policy and policy implementation are Manitoba and Quebec.

Provincial Land Policy and Administration in Manitoba


Cabinet
Provincial Land Use Committee of Cabinet 1
Minister of Municipal Affairs 2
Interdepartmental Planning Board (Deputy Ministers) 3
Crown Land Classification Committee 4
Provincial Planning Branch 5
Municipal Planning Branch 6

1. Responsible for Provincial Land Use Policies (PLUP's)
2. Responsible for the administration of PLUP's
3. Responsible for interdepartmental coordination
4. Responsible for planning Crown land within municipalities
5. Provides staff support to the Minister, the Provincial Land Use Committee and the Interdepartmental Planning Board
6. Oversees and supports local planning

Manitoba's Provincial Land Use Policies are put into effect through an interdepartmental system comprising a Provincial Land Use Committee of Cabinet (PLUC) and a statutory Interdepartmental Planning Board (IPB) comprising deputy ministers or the equivalents from all government departments and agencies having a significant interest in land.

The Cabinet Committee, among its other functions, is responsible for the PLUPs and for advising the Minister of Municipal Affairs in the exercise of his statutory responsibility for general land use policy and program coordination.

The Minister, in turn, is supported by a Provincial Planning Branch in his department, which also provides staff support to the PLUC. Under the Cabinet Committee the Board is responsible for interdepartmental and interagency coordination and for PLUP implementation.

A number of permanent and ad hoc interdepartmental committees report to the PLUC and IPB on such specific subjects as Crown land planning, water policy, soils, and particular problems and issues.

Thus Manitoba has a clearly defined system in which land use policy is formally adopted by Cabinet and applied, under the statutory responsibility of one minister, through deputy ministers and their counterparts.

Quebec's course of action has been quite different, avoiding the centralised, top-down approach employed in Manitoba. Essentially this has been done by using the regional county municipalities as a two-way bridge between the provincial government and the local municipalities.

The plans of the RCMs must respect stated provincial land use objectives, which is accomplished through the participation of provincial officials in their preparation as well as through formal provincial approval, and they in turn govern local land use plans. On the other hand, provincial departments are also bound by the plans of the RCMs.

Thus, in effect, both provincial and local interests are reflected in regional (or perhaps more accurately, subregional) plans which govern both provincial and local activities.

Area-Specific Cooperation: FREMP

Cooperation among agencies from different levels of government to achieve common goals for a specific area or place is not rare. Examples include federal-provincial cooperation in river basin planning, joint provincial-municipal transportation planning, and tri-level cooperation in economic development and (formerly) urban renewal.

Typically such operations are temporary, have rather narrow purposes, involve a single "lead agency" of each of the federal and provincial governments, and entail management rather than policy (though all these are generalisations, not universal rules).

An outstanding exception — a continuing, tri-level, land planning and management program which is broad in aims, scope and participation — is the Fraser River Estuary Management Program, FREMP.

The estuary of the Fraser River in British Columbia is a classic case of multiple and competing land uses. Its shores accommodate harbours and port facilities, industries — including the main concentration of the province's forest products industry, extensive suburban development, and agriculture. Its waters provide a major commercial fishery as well as sport fishing and food for Indian communities. The estuary as a whole, including its wetlands, provides critical habitat for migratory birds, supports much other wildlife, and has varied recreational potential for a growing urban population.

More than 60 public agencies, federal, provincial, municipal and joint, are involved in the estuary's management, most of them with specific single-purpose mandates.

In 1977 the federal and provincial environment ministers agreed to undertake a joint study of the estuary, which in two phases identified issues and problems, reviewed the jurisdictional and administrative situation, and proposed a management plan and process.

Out of this FREMP was born in 1985. The key features of FREMP are:

- agreed goals and policies,
- a joint management structure,
- a coordinated project review process,
- specific activity programs, and
- area plans.

- FREMP has adopted, and secured political commitment to, a "superordinate goal":

  to provide the means for accommodating a growing population and economy, while maintaining the quality and productivity of the Fraser estuary's natural environment.

  To all intents and purposes this is an area-specific definition of sustainable development.

  More specific goals, supported by appropriate policies, relate to port-industry development and transportation, water quality, habitat management, and recreation. Management principles include:

  - recognition of the estuary's economic and environmental importance in all planning and management activities,
  - simplicity and practicality,

  - phasing of programs,
  - broad consultation, and
  - encouraging compatibility of onshore land uses.

- A management committee is responsible to the federal and provincial ministers. Its Executive comprises representatives of the two environment departments, the federal Department of Fisheries and Oceans, and the two harbour commissions; "members at large" are drawn from other federal and provincial departments, municipalities, and Indian bands.
- All development proposals on the estuary are subject to a single review system in which all regulatory agencies participate as appropriate. This includes a three-level environmental review process in which the third level involves the full federal Environmental Assessment and Review Process (or equivalent) procedure.
- Individual activity programs deal with:
  - water quality,
  - habitat management,
  - recreation planning,
  - emergency management,
  - port and industry planning,
  - navigation and dredging,
  - log management,
  - waste management.
- From a land use planning standpoint one of the most interesting aspects of FREMP is the designation of different parts of the estuary as appropriate for particular uses. These "area designations", originally proposed in the Fraser Estuary Study's final report, are now being refined by FREMP and incorporated into municipal land use plans and regulatory and approval régimes.

While it would perhaps be premature to proclaim a four-year-old program an unqualified success, so far FREMP seems to provide an outstanding model of effective cooperation in land use planning and management among three levels of government and a multiplicity of agencies.

It is therefore worth noting that this accomplishment has been attributed [ref. 54] to three factors:

- the *management structure and system*, including *common goals and policies*, embodied in a formal limited-term agreement which on its renewal can incorporate the experience gained in the previous five years;
- *continuity*, both institutional and individual: existing agencies and their mandates were linked together, not replaced;
- *communication*, with emphasis on the resolution of practical issues rather than ideological confrontation.

Other Approaches to Integrated Planning

Two other ventures in integrated land use planning are worth noting as well, though one really never came to fruition and is now defunct, while the other as yet exists only on paper.

In its 1966 White Paper [ref. 44] the Ontario government proposed something very close to a provincial land use plan, at least a comprehensive set of regional land use plans coordinated within a province-wide framework, and for several years this intention was confirmed in ministerial statements.

In 1974 the responsible minister actually announced in the Legislature that such a plan was being prepared, though nothing more was heard of it.

Much more recently, the Government of the Northwest Territories developed a scheme for linking land use planning, conservation planning, environmental impact assessment and land and water management into a single administrative and functional system.

If nothing else, these initiatives suggest possible long-term objectives.

Comments

The obstacles to achieving integrated land use planning are principally institutional: on the one hand the traditional, if erroneous, perception of land use planning as the exclusive responsibility of municipal government; on the other, the equally traditional organisation of government by function and its seemingly inevitable concomitant, the defence of "turf".

It seems unlikely that these barriers can continue to withstand the pressure for more comprehensive, systematic, goal-directed and effective land use planning that must inevitably arise from growing concern about the ways in which we use and misuse the land. The cases that have been described demonstrate that they can in fact be overcome, and provide practical models for governments which wish to do so.

5. Land Use Planning in Other Countries

The inclusion of some examples of land use planning in other countries should not be read as implying that the "state of the art" in Canada is backward by international standards. Nor is it intended to suggest that Canadians should hasten to adopt foreign models: each country has its own problems, and its ways of tackling them are determined by its own history, traditions, and systems of law and government.

In land use planning and related areas, Canadians have been if anything a little too ready to borrow ideas from others, particularly the United States and Britain, without considering sufficiently carefully how well they are suited to Canadian practices and institutions.

Nevertheless, a look at a few foreign examples will help to demonstrate further how land use planning can be used to promote conservation, environmental improvement and sustainable development.

The four cases that are briefly described were chosen according to the following criteria:

- they are relevant to the theme of sustainable development,
- they do not duplicate Canadian experience already described,
- they are nevertheless relevant to Canadian conditions and issues,
- they relate to both regional/rural and urban environments,
- the schemes described are not merely ideas or proposals, but at least in part have been or are being put into effect.

5.1 U.S.A.: The New Jersey Pinelands Commission

[Refs. 25, 28]

The special interest of the Pinelands Commission lies in the use of a special agency with its own statutory powers to protect a unique resource, without resorting to large-scale land acquisition and relying largely on existing mechanisms including local land use plans.

New Jersey's Pine Barrens comprise over 4,000 square kilometres near the Atlantic coast south of Trenton, N.J. The sandy, acid soils are unsuitable for agriculture, and the Pinelands, a UNESCO International Biosphere Reserve, remain a semi-wilderness area unique in the intensely developed northeastern U.S. "megalopolis". They include dense forest, wetlands, and many species of birds, mammals, reptiles and amphibians.

Matching federal and state legislation in 1978 and 1979 established a 15-member Pinelands Commission to protect the natural and cultural resources of the area, as well as recreational and educational values and agriculture.

Although the new commission received $26 million from the federal government to be used in part for the acquisition of key areas and sites, the aim was and remains to avoid large-scale land acquisition, to maintain mixed public and private land ownership, to encourage appropriate kinds of land development, and to operate mainly through coordinating the application of existing laws and the planning and land use control programs of the federal, state and local governments.

(Plans and planning activities already applying to all or part of the Pinelands included, among others, the Coastal Zone Management Program; the state's Development Guide Plan, Comprehensive Outdoor Recreation Plan, and Water Supply Master Plan; and the programs of a number of regional and local planning agencies.)

The commission began its work by analysing both the development pressures affecting the Pinelands, and their carrying capacity: that is, how much development of what kinds could be sustained by different parts of the area without impairing the values the commission sought to protect.

On this basis the Pinelands have been divided into "management areas", in each of which certain kinds of land use are permitted and others excluded. The management areas include:

- "Preservation Area Districts", to be retained essentially in their natural state,
- agricultural, forest, and rural development areas, and
- "Regional Growth Areas" which are open to general development.

These designations involved some mutual adjustments of management area boundaries and municipal land use plans, which are intended to be consistent with the commission's plans and to be, in fact, the main instrument for putting them into effect. Negotiations were carried out also with federal and state agencies to ensure that their programs would observe the commission's plans, which will in turn be integrated with the Coastal Zone Management Program.

In addition to local land use plans, other devices for implementing the commission's plans include:

- Selective land acquisition.
- Several specific land and resource management programs.
- A "Development Credit Program" whereby "development credits" can be purchased by landowners in areas where development is permissible from owners in areas where it is restricted. (This is a variant of the "transfer of development rights" [TDR] device usually employed in cities to redistribute permissible floor area among nearby sites.)

The Pinelands Commission approach to land use planning for areas of special value falls between conventional zoning and land management practices on the one hand, and comprehensive public acquisition for park, nature reserve, or similar status on the other. It is a way of protecting environmental values and reconciling potentially incompatible uses of land through sensitive planning and the selective use of different measures, rather than by relying exclusively on either of those somewhat blunt instruments.

Variants of this approach are employed by New York's Adirondack Park Agency and by Britain's national park planning boards, as well as by Ontario's Niagara Escarpment Commission. It is a device that deserves serious consideration in Canada wherever — seacoast, rural area of outstanding scenic quality, mountain resort area — natural values should and can be protected without excluding private land use or preventing private development.

5.2 Western Europe: Land Consolidation

[Ref. 27]

The long history of rural land ownership in Europe, including the practice of dividing inherited land among the heirs, has left much farmland fragmented into small, irregular parcels which are unsuited to modern agricultural methods, often difficult of access, and generally make for inefficient use of land and poor conservation practices.

Countries such as France, the Federal Republic of Germany, the Netherlands and Switzerland have all therefore adopted procedures whereby land ownership patterns can be comprehensively reorganised. Naturally, these procedures vary in detail according to the laws, administrative practices and customs not only of the different countries but of states, provinces, cantons etc.; but in broad outline they follow much the same pattern.

Normally the initiative comes from the landowners themselves, and a scheme cannot proceed without the support of at least a majority of those affected. Following an affirmative vote, which includes agreement to cost-sharing, the responsible government department or public agency carries out a detailed study of the land, including soil types and capability, slope, drainage, buildings and other improvements, etc. It then prepares a completely new plan for roads, drainage and other works, and for the division of the land into new parcels, which are allocated to owners in proportion to the area and value of their original holdings.

This is a very much condensed account of what is in reality an extremely complex process which can take as much as 20 years to complete.

The physical planning — determination of land suitability, road layout, drainage system, etc. — is probably the most straightforward aspect, though complicated by the need to allow for existing buildings and other physical features.

The reallocation of land, both as between different uses (e.g., farming versus conservation) and among owners, presents complex and sometimes extremely controversial issues of equity and, in certain circumstances, compensation.

Other problems arise from such factors as changes in ownership and from the difficulty of actually carrying out the scheme with a minimum of disruption to life and production. Nevertheless, completed schemes have secured important improvements in land use, including:

- more rational use of land in terms of its suitability for crops and for other uses,
- more efficient use of land in terms of size and shape of parcels and consolidation of ownerships,
- improved drainage,
- allocation of land for conservation purposes and for public use,
- improved access to parcels, generally with a substantial reduction in total road length,
- accommodation of major facilities such as highways and canals with minimum disruption.

Canada does not have the jigsaw-puzzle pattern of land parcels to the extreme extent that can be found in Europe, and the unavoidable difficulties and costs of reorganising registered parcels would probably be justified only in exceptional cases. But there are nevertheless substantial areas where (as Thomas Adams pointed out) the existing pattern of parcels either is poorly suited to the terrain, or creates farming units of uneconomic size, or both. In such cases the feasibility and desirability of adopting the European practice would at least be worth examination.

Legislation in some provinces already provides for cancellation or "replotting" of subdivision plans, but this has so far been applied only to premature or unsuitable

subdivision into building lots; securing better use of rural land through the creation of parcels of more appropriate size and/or shape does not seem to have received much consideration.

5.3 New Zealand: The "Green City"

[Ref. 36]

The metropolitan area of Auckland, New Zealand, has a population of some 800,000 (comparable with Canada's National Capital Region), of whom 300,000 live on the isthmus which defines the inner part of the city. The Auckland Regional Authority is carrying out a scheme to discourage the use of private cars in this area in favour of transit, bicycles and walking, while simultaneously "greening" it with trees, parks and pedestrian ways.

Essentially the plan comprises:

- improved, express transit service along main routes to the downtown area from "nodes" served by local buses;
- a system of "green ways" providing pleasant and safe pedestrian and cycle access to the nodes. These are created by using lanes and rights of way, narrowing street pavements, acquiring strips behind rows of houses, etc.

The nodes, provided with cycle parking, are natural locations for neighbourhood shopping, community centres and similar facilities. The green ways link residential areas not only with the nodes but also with schools and parks, and are providing the basis of a system of interlinked open spaces.

Associated with these basic elements, streets are narrowed or closed off to discourage vehicular traffic (and to provide for the green ways), and there is an ambitious "urban forest" program of tree planting not only along the green ways but in all available spaces: "waste" land, rights of way, road verges, etc.

Canadian cities have in general been planned to accommodate the automobile. In their newer parts, built at relatively low densities, convenient public transportation cannot be provided at acceptable cost, while the older streets are often unattractive for cycling and walking.

Auckland provides an example of how a city can be "retrofitted" to make a combination of walking or cycling and public transportation more practical and attractive in comparison with car use.

Most Canadian cities, of course, face climatic conditions that New Zealand does not, and one cannot imagine a green way system working in Winnipeg or Montreal as it may in Auckland. Nevertheless, although the principle would require some adaptation to be practical in Canada, it still has applications to the design of a more sustainable Canadian urban environment.

5.4 U.K.: Restoring an Urban River Valley

[Ref. 45]

At one time "Sheffield" and "steel" were almost synonymous, and the heart of Sheffield's steel industry was the valley of the lower Don River, an 860 hectare area, extending to the centre of the city, of factories, rail yards and workers' houses.

But in the decades after the Second World War the British steel industry virtually collapsed and most of the housing was demolished as slum. By the '80s half the Lower Don Valley was vacant or derelict and many of the remaining buildings deserted. Eventually the civic authorities recognised that the industry was not going to revive and that another future had to be sought for an area that was intimately involved in the city's history and sense of identity.

Wholesale acquisition for recreation and public use was ruled out both by cost and by economics: some jobs remained in the valley, and despite the disappearance of most of the steel industry it still held potential for new economic development that the city badly needed.

The course of action adopted was to employ environmental restoration not just as a direct benefit to the city but also as a means of encouraging new development and employment in the valley.

A major open space system totalling 50 hectares includes one large new public park, an athletics centre, and a landscaped development area for technology-based industry. This core system is linked to "environmental improvement corridors" along major roads, railway lines, the river and the canal which runs parallel to it, to a system of pedestrian and cycle paths, and to landscaped links to adjacent residential areas.

The open space system as a whole has been designed to encourage the ecological rehabilitation of the valley and to provide wildlife habitat as well as a pleasant environment for humans.

Early (1987) indications are that the city's strategy, supported by a publicity and information program, is likely to be successful. A regional shopping centre is to be built on a former industrial site in the valley, and other industrial and commercial developers have shown interest. The chances seem to be good that the Lower Don Valley will again play a major role in the local economy, if of a quite different kind from before, and will be an important recreational and visual asset to the city as well.

There are several morals to this story.

One is that, while the economic restructuring which is taking place throughout Europe and North America, the shift from "smokestack" industries to "high tech" and services, may and does cause serious short-term dis-

ruption, it also provides great opportunities, not least for environmental rehabilitation.

Another is that the creation of a more humane and ecologically healthy environment can be economically beneficial as well.

Finally, cooperation between the public and private sectors to attain combined economic and environmental goals not only is possible, but is likely to be the most effective course.

All these lessons are as valid in Canada as anywhere else, and indeed are being applied in communities like Sudbury and in the redevelopment of decaying urban waterfronts.

6. Concluding Observations

6.1 The Contribution of Land Use Planning to Sustainability

Experience demonstrates that land use planning is already contributing in a number of ways to the achievement of sustainable development in Canada.

They include:

- *Promoting efficient use of land* by regulating wasteful or unnecessarily costly forms of development and by encouraging multiple use of land where different uses can coexist harmoniously. Examples include the control of "urban sprawl" and the use of Crown lands for both recreation and forest production.
- *Allocating renewable resources*, especially forest resources and water, for optimum and sustained use.
- *Protecting lands, resources and features of special value* from destruction or misuse. These may be economic resources such as prime agricultural land or deposits of mineral aggregates, or areas or sites of scientific, scenic or recreational value.
- *Resolving competing demands* for land in relation to predetermined goals, criteria and priorities.
- *Encouraging and facilitating environmentally sound economic development.*
- *Reducing environmental pollution* through controls on location, siting and design and through imposition of performance standards as conditions of development.
- *Promoting sustainable urban development* through the regulation of form and density and through standards for the provision of open space and other public amenities.

It cannot be claimed that all these things are being done consistently and effectively throughout Canada. Regrettably, this is by no means the case. But enough has been and is being accomplished in each of these areas to show convincingly what is possible. The intention here is not to advance land use planning as a panacea; as already pointed out, there are many important development/environment issues that have to be addressed by other means. Land use planning is only one tool; but it is a tool of considerable potential value and versatility.

Why, then, does this potential seem to have been generally neglected?

The question is an important one, because if land use planning is to be more widely and effectively employed in the cause of sustainability we must be aware of the obstacles to be overcome.

Probably the most fundamental of these lies in societal attitudes towards both "land" and "planning".

In North America, land is generally equated with private property, and the conviction that "you can't tell people what they can do with their own land" is still widely and firmly held. This view is reflected in the movement to include the protection of "property rights" in the Charter of Rights and Freedoms, although land ownership rights have never been absolute in Canada.

And although "corporate" and "strategic" planning have become not merely acceptable but generally practised in the business world, the association of planning with the public sector remains vaguely suspect, suggestive of centrally managed economies.

Hence, though the idea is certainly more generally accepted than it was, "land use planning" still carries for many people the connotation of unacceptable government interference in the rights of the citizen. This discourages any strong political commitment, particularly at the federal and provincial levels.

The diffuse character of land use planning is the other basic problem.

The fragmentation of authority under which land use planning is carried out and the variety of purposes to which it is applied prevent its full potential effectiveness from being realised (though, as has been described, efforts are being made in some parts of Canada to change this state of affairs). They also disguise the core of principle and methodology shared by the different programs, some of which do not even bear a planning label.

Thus land use planning has an "identity problem" (symbolised by the use of a number of different terms for the same basic activity) which hinders the recognition of its generic nature and its potential.

So pervasive is this phenomenon that some people who are engaged in land use planning as a vocation do not think of themselves as "planners", while others who do cannot readily define the essential nature of their profession.

As a distinct, identifiable professional occupation, land use planning tends to be equated with *municipal* planning and is thus associated with the particular goals and constraints of local government, even dismissed as no more than a branch of municipal administration. Again, this fosters neglect of its broader potential.

6.2 Moving Ahead: (i) Orientation

Fully effective use of land use planning as a tool to achieve sustainable development will require political and administrative actions which will be outlined in the next section. Such actions, however, call for a reorientation of public policy involving important changes in philosophies, perceptions and attitudes.

The Perception of Land

First and most fundamentally, the acceptance of sustainable development and the safeguarding of the human habitat as primary and urgent goals of public policy calls for a drastic change in our attitude towards land.

Public recognition of the need to protect "the environment" is growing, the opinion polls tell us, but in North America land continues to be seen by the majority less as part of "the environment" than as private property, commodity, source of income and profit, provider of recreation, means of waste disposal, emblem of social status.

Such a view of land cannot be reconciled with the reality that land, water, air and living things form a single ecosystem in which, as in all systems, tampering with one element affects the balance of the whole.

This reality may have been rediscovered recently by modern science, but in fact it is hardly new to North America, having been recognised by the aboriginal cultures long before Europeans arrived. The 1977 *Declaration of Nishnawbe-Aski* by the Grand Council of Treaty #9 (now the Nishnawbe-Aski Nation) expresses it thus:

> We are one with nature, with all that the Creator has made around us. We have lived here since time immemorial, at peace with the land, the lakes and the rivers, the animals, the fish, the birds and all of nature. We live today as part of yesterday and tomorrow in the great cycle of life.

Ultimately, whether we term it "ecological ethos" or "native spirituality", the prospect for humanity probably depends on acceptance of this view of the world.

It does not mean the termination of all private rights in land; it does mean recognising an overriding public interest and accepting the principle that land is not held absolutely but in trust for future generations.

Policy

The perception of land primarily as a private asset is inevitably reflected in political attitudes.

In a society which places a high value on property rights it is perhaps surprising that governments in Canada have been prepared to go as far as some of them have in imposing restrictions on those rights insofar as they are deemed to apply to land.

Notable examples include Quebec's and British Columbia's agricultural land controls, Ontario's Niagara Escarpment Plan, Prince Edward Island's regulation of ownership, and the general powers to control land development delegated to municipal councils in all provinces.

But no provincial government has so far ventured far down the road of comprehensive province-wide land use planning and, while admittedly there are practical arguments against doing so, the real objection is more likely to be that such action would be ideologically distasteful and perceived as politically hazardous. Politicians also tend to be averse to any kind of long-term plan which restricts their ability to make extempore decisions.

Some provinces have never been prepared to adopt firm land policies at all (though permitting their municipalities to do so) while in those that have, such policies have tended to be extremely vulnerable to changes in the political wind. Much the same could be said of the role of the federal government.

What is needed is:

- *acceptance of environmental protection, resource conservation and sustainable economic*

development as basic policy goals,
- *recognition of the importance of land use policy by all governments,* and
- *continuing commitment to provide consistent direction, leadership and standards in the area of land use policy as they do in such areas as health, education, and justice.*

The Planners

Changes in attitude and perception are also called for among the land use planners themselves.

Within the institutionalised profession as represented by the Canadian Institute of Planners the perception of "planning" essentially as municipal planning, while frequently denied, is widespread: "shop talk" among CIP members is more likely to concern current retailing trends or enhancing the municipal tax base than river basin planning or forest management.

It is likely that an appreciable number of them are still unfamiliar with the term "sustainable develoment", and what is perhaps worse, that many of the rest see no particular connection between sustainable development and their vocation.

The educational background of most planners is in the social science or design disciplines, and most have at best a scanty knowledge of the biological or earth sciences, including ecology.

The land, per se, is not acknowledged as the focus of the planner's responsibilities and activities, nor is a basic understanding of ecological principles a requirement for professional recognition.

The CIP's Code of Professional Conduct is concerned almost exclusively with the member's obligations to employers and clients, colleagues, and employees, in terms which could apply equally, mutatis mutandis, to lawyers or accountants. Nothing is said about the nature of his or her substantive responsibility, specifically as a planner, to society and its habitat.

Perhaps the profession needs the equivalent of the Hippocratic Oath, imposing on its members an ethical obligation to care for the land and to safeguard the health of the environment. (This not only might serve at least as a reminder and conscience-jogger to present members, but might also convert some of the not inconsiderable number of people who are actually engaged in land use planning but view the CIP with some scepticism.)

The absence of any real ethical or intellectual core to the planning profession should be a matter of concern not only to the Institute and its provincial affiliates but also to the university schools of planning.

6.3 Moving Ahead: (II) Organisation

> Most of the institutions facing [environment/development challenges] tend to be independent, fragmented, working to relatively narrow mandates, with closed decision processes. Those responsible for managing natural resources and protecting the environment are institutionally separated from those managing the economy. The real world of interlocked economic and ecological systems will not change; the policies and institutions concerned must.
>
> *Our Common Future* (Brundtland Report)

> Efforts have been made in Canada to achieve sustainable economic development. The greatest weakness in these efforts has been the sectoral approach to planning and development.
>
> *Report of National Task Force on Environment and Economy*

Sustainability as a Goal

The very word "planning" implies a purpose, an end to be pursued. As this paper shows, land use planning is a tool that can be used for many purposes, most of them socially desirable: keeping the costs of urban services under control, maximising long-term return from the use of renewable resources, protecting a unique natural landscape.

The central issue involved in employing land use planning in the cause of global sustainability is not the improving of the ability of planners or the existing land use planning systems, necessary though both may be.

If land use planning is to be used to achieve sustainable development, sustainable development must be clearly established as the goal of land use planning by the governments of Canada.

This may appear simplistic, but it is in fact fundamental. Like any tool, land use planning will only do what it is used for.

In fact the proposition is not as straightforward as it may seem, because it immediately raises the question of how the goal of sustainability relates to other goals: is it just one among many or does it in some sense take precedence over all the others?

This is not just an abstract philosophical point but a very real issue that will determine trade-offs and decision-making in issues involving conflicts between environmental and conservation values and other objectives. If one believes, as there is good reason to believe, that achieving sustainability is essential to the survival of society and perhaps of humanity, then it is reasonable to argue that sustainability must be the overriding goal of land use planning. But this raises some difficult questions with regard to goals relating, for example, to health,

or food production. This suggests that the real problem is not in fact one of setting priorities among such goals, but rather one of defining a comprehensive goal statement under whose rubric all necessary goals can be subsumed and the means of attaining them reconciled.

Policies and Planning Systems

The adoption of sustainability as a national land use planning goal does not imply some sort of land use "master plan" for Canada. Although in various forms this idea has been mooted from time to time, it is unrealistic both technically and politically to envisage a document that will specify the precise use of every hectare of Canada's land. Nor is it necessary.

A more practical aim is an agreed national set of land use policies and guidelines (ideally, related to a national conservation strategy) to provide a common framework for particular planning programs, including such programs as EIA.

What might a national land use policy look like? Any attempt to answer that question now is a little hazardous, but three principal components might be envisaged:

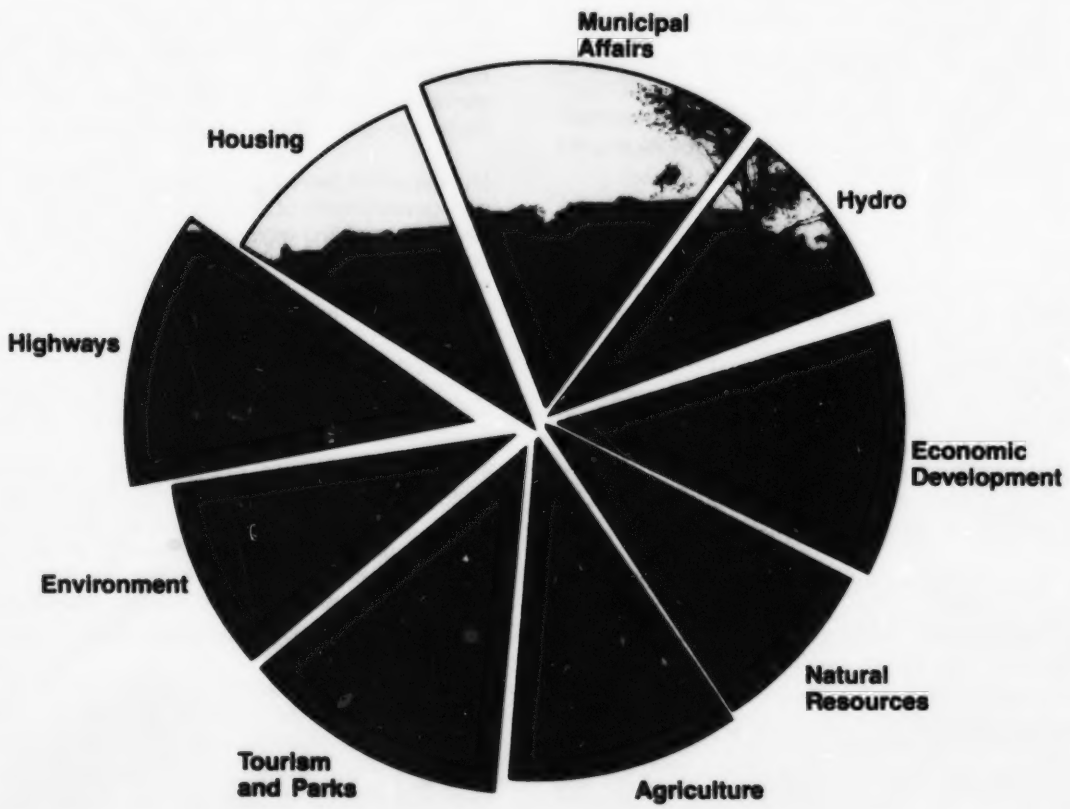
- A network of "*protected areas*" to which are attached special scientific, cultural, scenic, archaeological or other values, classified according to the nature and degree of protection required.

- Principles and guidelines based on the goal of sustainable development for the *conservation, use and management of resource areas* such as prime and special agricultural lands, forests, mineral reserves and water.

- A system of priorities and principles, also based on sustainability, to guide *decision-making on competing uses* (e.g., urban development versus agriculture or agriculture versus forestry).

To put such policies into effect would not require standardised planning legislation, procedures and methods from Pond Inlet to Point Grey (even if this were a practical objective) provided that in both places land use planning, as appropriate, respected the national (and provincial/territorial) goals and principles. This would require each government, federal, provincial and territorial, to elaborate the national policies and guidelines in terms of its own responsibilities, legislation, administrative practices, and specific land use objectives.

A national policy-plan-implementation hierarchy would require a *greater degree of integration among different programs* than is currently found in most provinces.



Typically, provincial governments have a patchwork of individual programs which have developed under different statutes, administered by different authorities, in response to particular needs. Half a dozen or more departments, each with its own mandate, objectives and programs, may hold substantial land-related responsibilities.

This state of affairs may perhaps have some political and bureaucratic advantages but it leaves much room for uncertainty and inconsistency in policies and objectives and for confusion and even for working at cross-purposes in administration. Furthermore, and probably more important, it may well leave gaps and weaknesses in the land use planning system as a whole.

Therefore, the elaboration of national land use policies by each government would need to be accompanied by a review of its own structures and procedures with respect to land use policies and programs, plan-making, and plan implementation. Several useful models are described in 4.10 and 5 above.

Specifically, such reviews would address the linkages between:

- national/provincial/territorial land policies, and regional/local land use plans and plan implementation;
- land-related policies and plans, and other planning programs, especially economic development;
- land-related programs of different departments and agencies;
- the land use policy/planning system, conservation strategies, and environmental impact assessment procedures.

Regions

Such reviews would also include, as a key element, an examination of the *regional structure for planning*.

It is now generally recognised that the basic building block of the land use planning system, the municipality, usually has boundaries too restricted and too arbitrary to be satisfactory for most land use planning purposes. Thus municipalities need to be grouped into larger planning areas, or such areas defined by other means, to make sound land use planning possible.

The empirical evidence lies in the fact that virtually every program discussed in this paper has been in some sense "regionalised", whether the "regions" are metropolitan areas, extensive tracts of Crown land, river basins, or something else.

By and large it is the region, however it may be defined, that provides the vital connecting link between general policy objectives, and plans which are carried out through day-to-day operations and administration. Also, it is largely at the regional level that land use and economic development policies intersect and must be reconciled. Furthermore, only the region can provide a suitable framework for ecosystem-based planning.

All these are critically important considerations in the implementation of national land use policies.

A single set of planning regions and sub-regions established by uniform criteria across the country might in theory be ideal, but is not essential and is unlikely to be achievable, considering that in practice no single set of regions will suit every governmental purpose.

The more realistic objective is that each jurisdiction define a consistent "nesting" set of regions and sub-regions capable of serving as a common framework for different land use planning programs.

Thus, for example, a river basin planning region might comprise several sub-regions suitable for inter-municipal planning.

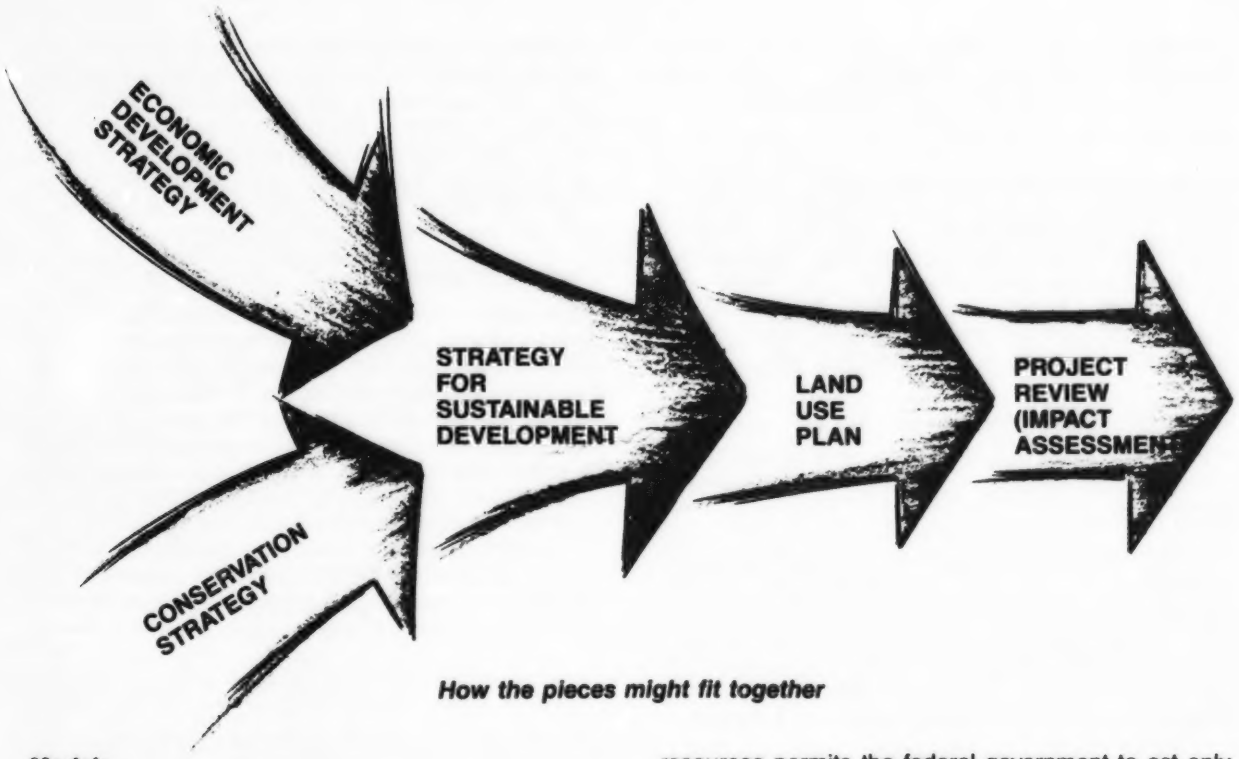
Municipal Planning

If municipal governments and their planners tend to be preoccupied with matters other than sustainability, environmentalists and even provincial governments often show little awareness of the potential value of municipalities as allies in the sustainability cause.

Municipalities have a great deal of power over the use and development of land, not only through provincial planning enabling legislation but also through building codes, public health legislation and other legal instruments. The legal authority is firmly established and thoroughly tested; municipal councils and officials are well versed in its use; and on the whole the public is accustomed to and accepts the exercise of this authority. *Thus municipal planning could be employed very effectively to advance the aims of sustainability.*

Increasingly, municipal plans have in fact attempted to protect natural resources, to maintain open space standards, to control noxious industries, and otherwise to regulate development in the interest of environment. But, confined by narrow jurisdictional limits, they too often lack both an ecosystem context and a coherent set of environmental goals and guidelines.

To alter this state of affairs so that, in effect, municipal plans became instruments of national and provincial environmental policies and conservation strategies, would represent an authentic and powerful application of Dubos' behest to "think globally, act locally".



How the pieces might fit together

Models

The diversity of land use planning in Canada provides a wide range of experience to draw on in linking different programs to achieve a common goal.

As this paper shows, there are valuable models to follow in all of the four key areas of

- *policy definition,*
- *plan preparation,*
- *program coordination,*
- *plan implementation.*

Canada would have probably the best land use planning system in the world if this experience were pooled and if each jurisdiction were to borrow, to the extent and in the form appropriate to its own circumstances, the best that the others had to offer.

Here, perhaps, is a task for the Council of Resource and Environment Ministers or for the national and provincial Round Tables on Environment and Economy.

6.4 The National Perspective and the Role of the Federal Government

The Government of Canada holds responsibilities with regard to major aspects of the health of the ecosystem as a whole, particularly matters which transcend political boundaries, notably air and water quality. However, provincial constitutional responsibility for land and most resources permits the federal government to act only within rather narrow limits in the field of land use planning.

Nevertheless it has an important role to play in four respects:

- the north,
- information,
- federal programs,
- leadership.

The North

The present situation with regard to land planning and management in the two northern territories is outlined in 4.5 above. It involves the participation of several federal departments and agencies; devolution of federal authority to the territorial governments; transfer of title and substantial land-related rights to the aboriginal peoples; and a new comprehensive land use planning system which has evolved rapidly since it was established.

In principle, all of these developments are commendable; but they have taken place largely independently of each other and in a somewhat ad hoc fashion, seemingly without much regard to the implications of one for the others. Hence there is a real danger that the net result, with regard to land, natural resources, and the environment generally, will be a set of jurisdictional and regulatory arrangements different from but quite as complex as anything to the south.

This would not be a satisfactory outcome in a part of Canada where the issue of achieving sustainable development is more concrete and more immediate than anywhere else in the country.

Since primary responsibility for northern lands still resides with the federal government, the federal government has a corresponding responsibility — while respecting the rights, interests and aspirations of the aboriginal peoples and the territorial governments — to ensure that the eventual arrangements for planning and managing these lands will be as simple, comprehensible and equitable as is consistent with effectiveness.

Land-Related Information

For Canada as a whole the federal government has an indispensable role as a source of land-related information.

Here too Ottawa's past record is commendable: examples include that essential nation-wide data base, the Canada Land Inventory; the Canada Land Use Monitoring Program, now terminated; pioneering work in aerial photography, remote sensing, and computerised geo-information systems; and comparative studies of land planning and management systems across Canada.

The continuation of such work is of fundamental importance to the technical improvement and application of land use planning, in particular to the progressive extension of its scope to the ecosystem as a whole.

The contribution of the Department of the Environment in particular cannot be duplicated by any single provincial government and probably not through interprovincial cooperation. Hence the disappearance of the Department's Lands Directorate is cause for concern despite the creation of a new Sustainable Development Branch.

In one respect in particular the federal government needs in fact to take a new initiative.

We live in an era of economic, demographic and technological changes that will, perhaps in the quite near future, substantially affect Canada's human and economic geography; a notable example is the combined effect of information technology and basic economic shifts on the distribution of population and economic activity.

But no systematic attempt is being made to identify or forecast such developments.

The responsibility is not and probably should not be exclusively that of the federal government, given the significance of the implications for the provinces. Nevertheless, Ottawa needs to discuss with the provincial and territorial governments and perhaps with universities, the establishment of some form of permanent institution for continuing monitoring and forecasting of trends and influences in the pattern of population distribution, economic activity and land use across the country.

Federal Programs

This paper has provided numerous examples of federal involvement in programs directly affecting the use of land in the provinces, including regional economic development, water management and environmental impact assessment. To these could be added federal responsibilities and activities in transportation, agriculture, forestry and other areas. It should be a principle rigorously maintained under the Federal Policy on Land Use that all such activities should recognise the need for, and promote, sound land use planning (as, for example, the programs of CMHC once did so effectively) and should, wherever this is applicable, be conducted only within a framework of planned land use.

National Land Use Policies

But the federal government's crucial role is to provide *leadership* in land use policy.

The previous section argued for a "national set of land use policies and guidelines", and the word "national" was used deliberately because the realities of both Canadian politics and Canadian geography dictate that such policies be developed and adopted cooperatively, not imposed from Ottawa. But the initiative should come from Ottawa, and indeed would probably have to, as would — to be realistic — the willingness to carry much of the burden.

Such an initiative would hardly be a dramatic new departure in constitutional precedent or federal-provincial relations. The work of the Commission of Conservation, of CMHC in its early years, and of the short-lived Ministry of State for Urban Affairs in the '70s, are outstanding precedents.

More recently we have seen river basin planning and regional development agreements with the provinces and territories, the Federal Policy on Land Use, and strong federal support for the conservation strategy principle.

The initiation of a national land use policy would only be the logical continuation of a course which the Government of Canada has in fact pursued ever since Confederation.

Summary

Land Use Planning and Sustainable Development

The imperative need to devise and implement a formula for sustainable development has occupied both the (Brundtland) World Commission on Environment and Development and Canada's National Task Force on Environment and Economy. The Task Force defines sustainable development as development which ensures that *the utilization of resources and the environment today does not damage prospects for their use by future generations*. This remains, however, more an aspiration than a plan of action. The land — the solid ground we walk on — is fundamental to almost every kind of economic activity, and it is also a vital component of the global ecosystem. This paper argues that land use planning can therefore be a key element in devising a concrete, purposive strategy for sustainable development.

The Evolution of Modern Land Use Planning in Canada

Land use planning is broadly defined here as the process of *making considered decisions about how people should use (or leave unused) some part of the earth's surface, having regard to known and expected circumstances and to given aims and/or criteria*.

Land use planning in Canada extends back at least to the earliest days of European settlement. In the early decades of the 20th century a growing awareness of resource depletion, inappropriate use of rural lands, problems of urban growth, and other land-related issues, produced both the beginnings of urban planning under municipal authority, and the creation of the federal Commission of Conservation. The work of the commission, and in particular of its adviser Thomas Adams, linked resource conservation, efficient use of land, public health and other aims in a way which anticipated Brundtland and the National Task Force by 70 years.

But these achievements were largely dissipated and forgotten in the '20s and '30s. And although their spirit was revived by the federal government's Advisory Committee on Reconstruction appointed during the Second World War, the enormous demand for housing in the postwar years and the consequent problems of urban growth, including the building over of prime agricultural land, dominated Canadian land use planning for decades. These preoccupations led to the adoption of various forms of city-centred "regional", or intermunicipal, planning in most provinces. Gradually the conservation of resources, including water, the planning of resource use, and environmental protection, re-emerged as aspects of land use planning.

Unfortunately the Canadian practice of splitting jurisdictions over different aspects of land use, both within and among governments, largely frustrated the development of land use planning as a truly integrated activity with a coherent set of goals. As a result environmental impact assessment and conservation strategies have emerged as activities only tenuously linked to established land use planning processes.

Throughout the development of land use planning in Canada during the 20th century, the federal government has taken a prominent and often leading role. Examples include the Commission of Conservation, the Advisory Committee on Reconstruction and the Central/Canada Mortgage and Housing Corporation, which was in its way as influential as the Conservation Commission; federal initiatives in regional economic development, river basin planning and environmental impact assessment; and the crucial role of federal agencies as sources of land-related information.

Land Use Planning as a Contemporary Area of Public Policy

Whatever its limitations, land use planning is now well established in Canadian law and public administration, and it is generally — if not always warmly — accepted by the public as a legitimate function of government.

However, the use of the term "land" in most planning legislation and programs follows the legal tradition which European settlers brought with them. This falls considerably short of the wider perception of "the land" as "the environment" or "the ecosystem". Although this paper advocates a more comprehensive understanding of "the land", it argues also that the pervasive importance of land even in the narrow sense, combined with the established place of land use planning in law, administration and public acceptance, provides a valuable tool for sustainable development.

Land use planning should not, however, be thought of as a standard administrative formula or operational technique. It is rather an approach, a way of perceiving conditions, that can apply in many ways to many different sets of circumstances. This is its great strength (although also a source of difficulty, as is touched on below). It is distinguished by a particular set of characteristics which ideally include:

- explicit *goals*,
- identification of *land-related problems and issues*,
- *anticipation* of future conditions and needs,

- *comprehensiveness* in taking all relevant considerations into account and in involving all land-related public programs,
- *continuity* over time,
- combining a *systematic approach* with *flexibility*,
- *identification of responsibilities*,
- providing appropriate *opportunities for participation* by all concerned,
- providing decision-makers with *options*,
- recognising the exigencies of plan *implementation*.

Examples of Contemporary Canadian Land Use Planning

The paper employs several examples from the very wide range of contemporary Canadian land use planning to illustrate its potential as a tool for sustainable development. They illustrate also its present fragmented state.

Municipal Planning: The term land use planning is widely associated with its commonest form, municipal planning. Land use planning by municipalities is usually directed towards the specific objectives of local government. These seldom include such matters as conservation and may even be contrary to the aims of sustainable development (though some municipalities have made very positive efforts).

But the powers that can be exercised are substantial and could be extremely effective if employed to promote sustainability.

In Alberta the provincial government uses regional planning commissions to secure municipal adherence to its policies, while Quebec's regional county municipalities provide a mechanism for coordinating provincial and local land use policies and planning.

Crown lands: The planning of Crown lands and resources has tended to be strongly oriented towards maximum economic return, but is moving towards conservation, sustained yield and multiple use.

Ontario's Strategic Land Use Plan program is an example of systematic but narrowly-oriented "top down" resource use planning; the Manitoba system also tends to be "top down" but in relation to a much broader range of government policies and objectives; Alberta's Integrated Resource Planning System involves broader participation and is, within its limits, almost a model land use planning system.

Protection of agricultural land: This is an extremely complex issue with aspects that cannot be addressed solely in terms of land use. Several provinces, notably British Columbia and Quebec, have nevertheless adopted special measures to restrict the conversion of farmland to other uses.

Special cases: There are many examples of special arrangements to provide for land use planning outside the normal legal and institutional framework. Those discussed here are the Mactaquac Regional Development Plan in New Brunswick, an early attempt to promote sustainable development (before the term was invented) through land use planning; the Haldimand-Norfolk Study in Ontario, in which a comprehensive environmental appraisal provided the basis for regional land use planning; and Ontario's Niagara Escarpment Plan, in which land use planning is used to protect a valuable scenic, scientific and recreational resource in the face of diverse competing demands.

Northern Land Use Planning Policy: In the Northwest Territories, the aboriginal perception of land, the unity of environment, economy and way of life, and a strong conservation initiative, have combined to produce a draft regional land use plan which could equally well be termed a plan for sustainable development.

Water: Planning for water and water-related uses and water quality is extremely complex for a number of reasons. Nevertheless, three provinces are addressing the problem with some success. Saskatchewan and Alberta work through provincial river basin planning with wide participation. Ontario employs watershed conservation authorities. The federal government has participated in joint river basin planning for 20 years, and the principle is now entrenched in the Federal Water Policy. Ecosystem-based planning has become the goal in the case of the Great Lakes basin.

The diversity of land use planning in Canada is compounded by the existence of public programs which affect land use or are closely akin to land use planning, but which are not usually integrated into established land use planning systems. These include, notably:

- *Regional economic development* programs which influence land use patterns and which sometimes address land use directly.
- *Environmental impact assessment*, which tries to anticipate the environmental consequences of individual land development projects.
- *Conservation strategies*, which include the development of policies and programs to govern the use of land in the interests of conservation and sustainable development.

On the other hand, there are also efforts to coordinate land use planning and other land-related public programs, including environmental impact assessment. The principal approaches are:

- *Comprehensive land use policies* adopted by governments to guide all land-related government programs. The most notable examples are the Federal Policy on Land Use and Manitoba's Provincial Land Use Policies.
- *Coordination of land-related programs* through political and/or administrative structures and pro-

cedures, with or without a general policy framework.

These exist in at least rudimentary form in all provinces. They are particularly well developed in Manitoba and Quebec, though in quite different forms. In Manitoba they operate from the top (cabinet committee) down, in Quebec through provincial-municipal cooperation through the medium of the regional county municipalities.

- *Area-specific cooperation*, in which various government programs are coordinated in a joint effort to address specific land-related issues in a particular area. The Fraser River Estuary Management Program in British Columbia is a good example.

The paper includes brief descriptions of some programs in other countries to provide further illustrations of the range and potential of land use planning.

Comments and Conclusions

The paper concludes that the effectiveness of land use planning as a tool for achieving sustainable development has been clearly demonstrated by its application to, for example:

- promoting efficient use of land,
- allocating renewable resources,
- protecting lands, resources and features of special value,
- resolving competing demands for land according to predetermined criteria,
- encouraging and facilitating environmentally sound economic development,
- promoting sustainable urban development.

The best achievements of Canadian land use planning compare favourably with those of any other country. Canada could have perhaps the best land use planning system in the world if each of its jurisdictions were to adopt and adapt the outstanding Canadian models for its own use.

Perhaps the most serious obstacle is attitudinal: the perception of land as property and commodity, and widespread ambivalence towards planning in the public sector. Also, the very diversity of land use planning activities obscures the particular approach and principles which constitute their common core, and obscures also their collective achievements.

Full realisation of the potential of land use planning as a tool for the achievement of sustainable development calls for changes in the way in which it is currently employed. Such changes are likely to occur, however, only after we change our perception of land in relation both to "the environment" and to society and the body politic. Specifically, what is called for includes:

- First and foremost, *recognition of land as integral to the "life support system" of the species*, so that we think of it in terms of stewardship rather than of exploitation. Here we have much to learn from our aboriginal compatriots who perceive earth, air, water and living things as having an essential unity.
- *Recognition by governments of land policy as basic*, and as important as, say, health or education policy.
- *Rethinking of professional purpose, responsibilities and ethics* by those who actually practise and teach land use planning.

Adoption of sustainable development formally as a goal of land use planning at the federal, provincial and territorial levels of government is the first and fundamental step towards fully effective use of land use planning for sustainable development — because land use planning is only a tool to be used for the ends decided on by society.

Development of sustainability-oriented national land use policies should follow from this. While a national land use policy is not needed to put such policies into effect, the fragmentation of responsibility for land use and the environment characteristic of most governments in Canada would have to be overcome.

Greatly improved integration of land-related programs within a single policy framework is a primary need. This should include the explicit recognition of municipal planning as an instrument of land policy, and the adoption of the appropriate procedures supported, where necessary, by legislation. These measures would be facilitated by the adoption of regional systems expressly designed to serve land use planning purposes.

In addition to its broader responsibilities for major aspects of the ecosystem such as air quality, water management and fisheries, the Government of Canada has four specific areas of responsibility with regard to land policy and planning:

- To ensure that a coherent, effective and equitable system of land planning and management is not neglected in the processes of establishing aboriginal rights with regard to land and resources in *northern Canada*, and devolving new powers to the territorial governments.
- To maintain and expand the federal government's traditional and irreplaceable role as a *source of information* on land and land use planning in Canada.
- To ensure that its own *land-related programs* promote and reinforce sound land use planning, and where applicable are carried out within a framework of planned land use.
- Above all, to *provide the leadership* needed to establish sustainability-oriented land policies as the basis of land use planning throughout Canada.

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